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PB90-153875

A Management Review of the Superfund Program

William K. Reilly, Administrator
U.S. Environmental Protection Agency
Washington, D.C.

EPA

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ADMINISTRATOR'S PREFACE

In the course of Senate hearings held to confirm my appointment as Administrator of EPA, I was asked a lot of questions about Superfund. Members of the Committee wanted to know about the program's management and progress to date and, in particular, what I intended to do about improving Superfund's performance during my tenure as Administrator. Since I did not then have sufficient first-hand knowledge of the situation, I promised the Committee that I would immediately undertake as thorough a review of the program as could be completed in about ninety days. The result is the report in your hands.

For me the most important finding of the study is the need to set fair and realistic expectations for a program of the relative novelty and scope of Superfund. At the time of the program's initial enactment in 1980, virtually no one had any practical experience with the difficulty and duration associated with cleaning hazardous waste sites to health-based levels. The Agency and the country have spent the first nine years learning what a big job it really is, and building a base of experience from which to plan more efficient and effective methods of program management and site cleanup.

EPA's staff wrote this report, with a lot of help from critics and supporters alike outside the Agency. I have accepted it and will use it to guide the direction of the Superfund program in the months and years ahead. I think it provides a fair, dispassionate, and refreshingly candid assessment of the past, and a realistic plan for improving program performance in the future. I do not expect that everyone will agree with all it has to say. However, I do anticipate that this report will create a new atmosphere for a thoughtful and productive reassessment of Superfund, something that has been hard to achieve in the more emotional context of the recent past. I look forward to the challenge of keeping the promise of continuous improvement that I have made by accepting the recommendations of the report.

William K. Reilly
Administrator
U.S. Environmental Protection Agency

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REPORT OVERVIEW

In response to a series of questions about the achievements to date and future management of the Superfund program, newly confirmed EPA Administrator William K. Reilly commissioned this report. Completed in roughly ninety days, it comprises facts, observations, and interpretations drawn from Agency staff and from a variety of critics and supporters external to Superfund. This candid assessment of the program after nine years of experience suggests a practical strategy for realizing the greatest environmental benefit possible, given the long-term, incremental nature of the Superfund challenge.

Superfund has drawn a lot of negative attention in the years since its passage in 1980. While much of the criticism is appropriately grounded in a perception of slow progress and questionable management early in the program, just as much seems based on unrealistic expectations of the program. Speedily launched in response to such dramatic episodes as the Love Canal, Superfund is only now beginning to benefit from the lessons of numerous field trials that are essential to public engineering programs of any magnitude. As slow-moving as it may have been initially, Superfund has now accelerated to meet the very aggressive targets set in the reauthorization statute of 1986.

Even an efficient, smoothly managed Superfund program would continue to disappoint, however, if the main measure applied were the achievement of final cleanup at all sites currently listed on the National Priorities List (NPL). Experience is showing that final cleanup is a distant goal in most cases, and that EPA would do the public a disservice by quickly delisting sites to satisfy demand for a "quick fix." Rather, success must be measured in Superfund's ability to quickly remove the source of immediate risk to public health and safety, and to gradually minimize long-term risk from any pollutants remaining on site.

In this report EPA announces a new long-term strategy for Superfund. Although little in the strategy is literally "new", since most of the principles have begun to drive the program in recent years, this is the first time EPA has presented them as a comprehensive statement of program philosophy. The strategy contains the following elements:

Control Acute Threats Immediately. Superfund will set as its first priority the reduction of near-term risk to public health.

Worst Sites, Worst Problems First on the Road to Cleanup. Superfund will schedule incremental steps to clean up sites over time, expending scarce resources first on problems posing the most serious risks to public health.

Carefully Monitor and Maintain Sites Over the Long Term. EPA will not walk away from its obligation to protect human health and the environment at each and every NPL site -- no site, where hazardous substances remain, will be deleted from the NPL following a final cleanup that meets health and environmental goals until at least one five year review is conducted.

Emphasize Enforcement to Induce Private-Party Cleanup. EPA will use the fact and threat of enforcement, encompassing a broad range of administrative and legal tools, to increase the proportion of cleanup undertaken by private parties.

Seek New Technologies for More Effective Cleanup. The Agency will expand its research, and provide more comprehensive field support for the development and use of treatment technologies to promote permanent solutions.

Improve Efficiency of Program Operations. EPA will apply lessons learned to abbreviate time-consuming program procedures where possible.

Encourage Full Participation by Communities. EPA will involve citizens more fully in cleanup decisions, including sites in which Potentially Responsible Parties have taken the lead.

The major substantive sections of the report fully support the elements of this strategy. Most telling is the need to set public expectations of the program to recognize that success must be pursued over many sites for many years. Chapter 1 sets forth EPA's Superfund strategy. Removal and remediation of immediate threats is the first step, followed by a complex and invariably lengthy series of progressive actions to contain and/or gradually eliminate remaining on-site pollution. The ultimate step of delisting may follow by years the completion of final cleanup work on a site. Chapters II through VII present findings and recommendations that prescribe the means to Superfund's programmatic ends.

Chapter II presents the case for more muscular enforcement to promote private-party cleanups. The Superfund statute and the 1986 amendments (known as SARA) afford to Superfund a broad array of authorities to compel cleanup by private parties and to facilitate cost recovery for direct action under the Fund. EPA will use all tools available within the program to advance cleanup, but will exhibit a clear bias toward private party cleanup that meets health and environmental goals under enforcement action. The Agency will also target realistic amounts for cost recovery and take appropriate steps, including necessary rulemaking, to recoup outlays from the central Fund.

Chapter III outlines a number of procedures EPA can take to improve efficiency and consistency of performance in the remedial program. Prominent among these are actions to reduce the workload of hard-pressed Remedial Project Managers, to use the quicker device of the removal contract to conduct certain high-priority remedial work, and to improve Headquarters technical, administrative, and clearinghouse oversight and support to the field.

Chapter IV challenges EPA to invest more heavily in the development and use of treatment technologies to bring about permanent remedies in the field. The report identifies barriers posed by conflicting statute (i.e., RCRA's land ban requirements) and rule (e.g., Federal Acquisition Regulations), as well as opportunities for further investment in research and technical support.

Chapter V encourages an aggressive program of community involvement in Superfund site decision-making. Acknowledging that careful community consultation takes time, the report nevertheless places high value on full and deliberate public discussion, and accepts the consequence of an occasional missed deadline as the cost. The report also encourages EPA to eliminate current barriers to obtaining and using Technical Assistance Grants to the community, so that citizens can have independent access to technical advice.

Chapter VI addresses the key issues affecting EPA's ability to retain and reward key technical and professional staff on whose backs the program rides. This section contains a number of recommendations to increase pay, technical and administrative support, and other job benefits, while balancing the workload of these key staffers. The report also recommends steps to keep technical contractors out of conflicts of interest by precluding their participation in regulatory or program policy work.

Chapter VII proposes new ways to measure success for Superfund. Accepting that a long-term program cannot be evaluated early on the basis of ultimate results, this section recommends action on several fronts to involve citizens and public officials in the definition of acceptable mid-term criteria for evaluating Superfund. Recognizing that so much disappointment with Superfund's record originates with the failure to communicate both expectations and results, this section emphasizes broad-scale and continuous communication about the program, both from EPA to the public, and vice-versa.

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In his preface to the report, Administrator Reilly endorses these recommendations, and calls for a new period of calm, considered debate on the progress and future of Superfund. It is only in such an atmosphere of shared, realistic expectations that EPA, the Congress, and affected citizens and industry can work effectively to continually improve the public benefit from our enormous national investment in Superfund.

The following comprises a brief listing of the task group's 50 recommendations for improving Superfund. For a complete discussion of findings and recommendations, please refer to the appropriate chapter in the report.

Chapter I. A CLEAR STRATEGY FOR SUPERFUND

Chapter II. STRENGTHENING ENFORCEMENT AND MAXIMIZING RESPONSIBLE PARTY WORK AT SUPERFUND SITES.

Increase use of unilateral administrative orders for a more muscular enforcement program.

Take steps to ensure the full use of settlement tools provided for by the SARA amendments to negotiate cleanup agreements that do not compromise environmental goals.

Establish an integrated enforcement and response program.

Establish an integrated timeline for managing both enforcement and Fund-financed activities and establishing deadlines for key response actions by PRPs and the Agency.

Encourage the creation of specialized administrative support units (with proper skill mixes) to enhance the enforcement process in the regions.

Develop specific goals and timeliness to improve enforcement of information requests.

Expand Agency efforts to promote closer oversight of private party RI/FS.

Maximize Regional flexibility in shifting funds among sites to make the threat of enforcement more credible.

Improve approach to cost recovery by initiating rulemaking process that targets realistic goals and procedures.

Develop an improved strategy for recovery of costs for removal actions.

Improve intergovernmental coordination of Superfund enforcement activities.

Chapter III. ACCELERATING AND IMPROVING REMEDIAL ACTION

Communicate to Superfund Managers, staff, the Attorney General and the heads of other Federal agencies involved that the primary mission of the program is to take responsible action at sites as rapidly as possible.

Hold EPA line manages accountable for managing the program in accordance with this mission.

Direct the development of formal and informal mechanisms to reward innovation, risk-taking, and decisive action.

Headquarters and Regional Offices take actions to promote consistency in remedy selection, compliance with statutory mandates, and appropriate consideration of available factual and analytical data about site conditions and potentially applicable remedial technologies.

Take actions to minimize uncertainty and confusion about Applicable or Relevant and Appropriate Requirements of Federal environmental laws.

Take actions to enable Remedial Project Managers to identify and use EPA's technical support services. Within the next several months, lay the groundwork for effective long term coordination and management of technical support services to RPMs.

Resolve the fundamental policy question of what States' long-term role in the Superfund program will be, develop short- and long-term strategies to enhance State program capability.

Take steps to facilitate Regional Offices' use of and access to headquarters program technical and policy guidance.

Chapter IV. BRINGING INNOVATIVE TECHNOLOGIES TO BEAR ON POLLUTION AT SUPERFUND SITES TO STRENGTHEN REMEDY SELECTION

Review and revise all Agency policies and guidance to ensure that use of treatment technologies is given stronger emphasis in accordance with SARA's directions.

A senior program manager in the Office of Solid Waste and Emergency Response should serve as "Technologies Czar" to coordinate the development and use of innovative, cost effective, treatment technologies in the Superfund and RCRA programs.

Carefully evaluate impact of RCRA land ban or other rules on use of alternative technologies.

Develop guidance that balances the goal of advancing innovative technologies against the need to minimize challenges during cost recovery actions

Evaluate the provisions of the Federal Procurement Regulations to determine where latitude exits to eliminate procurement constraints to utilizing treatment technologies.

Establish nationwide technology support teams within the Office of Research and Development to assist the Regions in Remedy selection decisions.

Provide policy guidance to the Regions to ensure that treatability tests are emphasized, as well as guidance on how to use treatability studies in selection of a clean-up technology.

Establish an information clearinghouse within ORD for information on technology performance and make this information easily accessible to the Regions.

Continue and expand ORD's current technology-transfer activities.

Expand the Superfund Innovative Technology Evaluation Program in ORD and support NETAC.

Expand in-house and university research programs in targeted areas where private research is lacking.

Chapter V. A MORE AGGRESSIVE PROGRAM OF COMMUNITY INVOLVEMENT

Give citizens a much greater role in the Superfund program, especially at PRP lead sites.

Strongly support increased citizen involvement in Superfund decisions, accept occasional delays as a result of greater public involvement.

Plan for citizen involvement at each stage of the Superfund process.

Increase EPA staff to allow more frequent communication with the affected public.

Use "Senior Environmental Employees" (retirees) more extensively in Superfund.

Citizens' access to information should be comparable to that of PRP's.

Release information to the administrative record and to information repositories as quickly as possible, and ensure that citizens are notified of the availability of this information.

Write clear, understandable summaries of complex technical documents, and provide copies to citizens.

Encourage Regions to find ways to bring citizens into technical discussions early in the RI/FS process.

Strongly support the reform of the Technical Assistance Grants program to eliminate barriers to their use.

Chapter VI. MANAGEMENT AND ADMINISTRATION: FREEING UP THE SKILLS AND THE TOOLS TO DO THE JOB

Develop pay, training and incentives programs to attract and retain key field staff.

Provide field staff with adequate administrative support.

Reduce Agency dependance on contractors in certain program areas and avoid conflict of interest in contracting work.

Chapter VII. ACCOUNTING FOR ACHIEVEMENT: COMMUNICATING PROGRESS TO THE PUBLIC

Identify more effective ways to include interested parties in the policy debate at a national level -- Start a national dialogue with Superfund's many constituencies on important elements of the program.

Accelerate improvements to the existing management measures to support the national program manager's communication of Superfund progress -- include "environmental results measures" as better ways to communicate progress.

Review Superfund's internal management measures with an eye toward eliminating unnecessary or redundant reporting and focusing more directly on measures to improve performance.

Develop and implement a national plan to inform the public about the Superfund program and its achievements.

Provide communications training to employees to help make public education a Superfund priority at basic levels.

INTRODUCTION

The Task Group intends this document to be a frank and open report on the state of the Superfund program in June 1989. Commissioned by newly confirmed Administrator William K. Reilly, the report presents facts, observations, and the best professional judgment of experts within the Agency and from several States who have struggled over nearly ten years to make Superfund work well to improve the environment. The report also draws on detailed consultation with citizens, reporters, Congressional staff, industry and governmental representatives, and communications professionals.

In preparing the document, The Task Group took the attitude that only through honest and objective reappraisal can the Agency recognize problems and opportunities and act on them responsibly. For that reason the report emphasizes clarity, candor, and constructive scrutiny of the genuine state of affairs in Superfund. If any hint of defensiveness or posturing has crept into these pages, it has survived our best collective efforts to eliminate it.

THE NATURE OF THE PROBLEM AND PERCEPTIONS OF THE PROGRAM

The Federal government's Superfund program has reached a critical juncture. Launched in 1980 as a frontal assault on the Nation's hazardous waste sites, the program began amid high expectations of quick success. This seemed a reasonable premise at the time. With broad-based public and Congressional support and a growing network of State, local, and private authorities, EPA had just led the Nation to notable progress against the most alarming environmental problems of the seventies: foul urban air, and choked, unsightly waterways. Compared to the ubiquity of such air and water pollution, the challenge of what was assumed to be a few hundred discrete, land-based cleanups appeared relatively easy. Furthermore, the Congress created a $1.6 billion war chest to ensure that funding would prove no obstacle.

Things have not worked out as smoothly as that, however. Since 1980, the problem of neglected hazardous waste sites has revealed itself to be far more complex and diffuse than anyone at first realized. In the fight to control conventional pollutants in air and water, EPA was able to apply proven technologies to produce fast results. With Superfund no such resource was available. Instead, EPA and State technical managers have exercised considerable ingenuity in devising ad hoc control strategies to deal with literally hundreds of field situations that are unique in the Agency's experience.

Measured against public and Congressional expectations, the pace of EPA's actual progress has proved frustrating. Controversy surrounding EPA's early management of the program unquestionably built a legacy of public distrust. Just as surely, persistent denunciations of the program have turned up the heat but shed little real light on the situation. As a consequence the Nation is only now beginning to confront the real dilemma: how to reduce environmental risks from a growing list of sites presenting ever new complexities, in a situation characterized by incomplete knowledge, immature technology, and relentless pressure on a limited pool of resources.

In the often contentious debate that has developed over Superfund policy and practice, EPA has operated without its once most valuable asset, the benefit of the doubt. Though the program has picked up speed, Superfund continues to fall short of public expectations. Whether fairly or not, debate centers around the program's flaws, both real and perceived--at all levels from national policy to local site management. Most disturbingly, citizens of communities affected by Superfund sites, sharing the right of all Americans to a clean and healthy environment, have increasingly questioned the commitment of their Government to protect that right. Pressed by the concerns of a vocally dissatisfied public, an impatient Congress has set tighter and more ambitious targets for Superfund.

In this charged atmosphere, the Superfund program's competent and highly motivated technical and legal staff have found their workloads rising, while their real-dollar earnings, job satisfaction, and public support decline. Understandably, many are leaving public service, some to join private concerns that allow them to continue their work on hazardous waste management at considerably higher salaries, while providing a buffer from public criticism.

It needn't be this way. Both success and failure are relative, the final determination being a function of expectations as much as of performance. If Superfund is perceived so far to have been a high-cost disappointment, it is largely because program performance has not met high, and perhaps unrealistic expectations. Superfund is succeeding, however, in its no less vital obligation to make steady progress in defining the nature and scope of the task, and to discover, test, and carry out the most efficient methods of achieving lasting and satisfactory cleanups.

The number and distribution of hazardous waste sites we now recognize dwarfs the scope of the problem that was originally assumed. More than 30,000 hazardous waste sites have been identified as possible candidates for Superfund, with over 27,000 having undergone preliminary field review and classification. Of these, nearly 1200 have been assigned high priority for further action by EPA. Still more are being cleaned up by States or private parties. In fact, because remediation of the most damaged sites involves many years of painstaking ground-water treatment, new sites continue to be placed on the National Priorities List faster than existing sites are removed.

In evaluating the program, however, fair-minded critics should consider that the very idea of Superfund is new, generated from public debate and legislative action in response to such environmental catastrophes as Kentucky's Valley of the Drums and Love Canal in New York State. It was speedily designed, speedily enacted, and speedily put into place. In fact, it may be no exaggeration to call Superfund the most far-reaching national engineering program ever mounted without benefit of a single field trial. In such a program, the most important early products must necessarily include learning. In that respect, after nine years of experience the most important lesson may be that the Superfund program faces a workload stretching well into the next century, and would do so even if everything had gone right from the very start. It is time to adjust expectations accordingly.

Based on everything that is known about the situation, the only possible conclusion to be made is that the Superfund program will be around for many, many years and it will be quite expensive. EPA estimates that the cost of construction at current National Priorities List (NPL) sites is likely to be $30 billion, assuming that half the work will be done directly by the Fund and half by responsible parties. It will probably take about 13 years to begin construction on just the sites that are currently on the list, and the Agency expects to add sites to the inventory at the rate of about 75 to 100 per year. Based on EPA's current inventory, the National Priorities List is expected to grow to 2100 sites by the year 2000. Currently, the average cost of construction per site is approaching $25 million, and there is every reason to believe that these costs will grow higher as some of the Agency's more complex sites move into the construction pipeline.

The problem is large, complex, and long-term, the job ahead enormous. It will require technical competence and ingenuity, administrative savvy and creativity, political courage and wisdom, and plain, old-fashioned persistence to clean all the sites already known to present unacceptable risk. Since it is evident that complete success is a distant goal, it is critically important to take time now to review the experience of the last nine years, and to harvest the learning that will allow the Nation to make the best use of the Superfund program in the succeeding decades. That is what this report is about.

THE RECORD TO DATE

Many have judged the success of Superfund by the number of sites removed from the National Priorities List. Currently that number is 26, with another ten sites newly clean and soon to be deleted. While that number reflects substantial recent progress, it is still below initial projections. Evaluating Superfund by tallying site deletions, however, is not only discouraging, it is inherently misleading. For one thing, deleting a site from the NPL is the very last step in a multi-stage process. Before deletion, EPA monitors sites long after cleanup standards have been achieved to ensure that those standards remain in effect.

Given the long-term nature of the problem, the number of early cleanups may be an indicator only of how few sites are physically capable of being cleaned and verified so quickly. The figure may in fact say more about the intractability of pollution at most sites than it does about the success of Superfund.

Success for Superfund is more appropriately measured in terms of the successive, interim steps that quickly provide a margin of safety for local residents. By this standard, EPA is slowly gaining momentum. Although the record still needs substantial improvement, it is better than it looks.

For example, the Superfund Amendments and Reauthorization Act of 1986 (SARA) set a tough deadline of one year for EPA to complete an additional 4700 preliminary site assessments. The Agency met this goal. EPA has conducted emergency removals to attack the most immediate source of toxic exposure at more than 1300 sites in communities across the nation. In fact, the removal program is one of Superfund's biggest unsung success stories. Actions taken under this program have cost nearly $400 million and EPA has used its enforcement authorities to get responsible parties to take removal action in another 200 cases. Finally, long term cleanup work is currently underway to neutralize the source, contain the spread and systematically reduce (or eliminate) toxic pollution at over 400 sites under Superfund's remedial program.

SARA also set a deadline of October 1989 for EPA to undertake the major technical planning work (known as remedial investigation/feasibility studies) at 275 new sites, a formidable target. As this report is issued, EPA can announce that this ambitious goal has also been met, three months early. Since SARA, too, EPA has begun the major construction and reconstruction necessary to complete the job of cleanup (known as remedial action) at over 100 locations, and is on schedule to meet the extremely aggressive goal of 175 new starts by mid-October.

As for enforcement, since the passage of SARA, the Agency has seen the initiation of approximately $1 billion worth of site work under enforcement action and settlements. In fact, at this time roughly half of Superfund's on-site work is being conducted by responsible parties under some form of enforcement action by EPA, and this proportion is expected to increase over time.

When all is said and done, few realize that the environmental benefits of Superfund go well beyond Superfund cleanups. Since the passage of CERCLA, many States have enacted their own hazardous waste site cleanup laws. The Superfund liability standard has also provided a powerful incentive for businesses, Federal facilities, and local governments to properly manage their wastes. Additionally, the threat of potential Superfund liability has spurred businesses, particularly during property transfers, to conduct environmental audits and remediate environmental problems, not only for hazardous wastes but for environmental problems in general.

Though this is an impressive record, the question remains, is it enough? The answer, obviously, is no. Even given the necessity for steady, incremental progress as opposed to "miracle" cures within the Superfund program, few believe EPA is doing as much as it can, as well as it can, or as fast as it can to move that progress along. EPA acknowledges the validity of that assessment.

THE CHALLENGE OF CONFLICTING EXPECTATIONS

It is one thing to state the Agency must do better, quite another to carry out the necessary improvements. This report makes a strong case that any single action the Agency takes to pursue a significant goal of Superfund may conflict directly with a competing, and often equally important goal. For example, the expectation of prompt cleanup often presses up against the need for full and responsive public participation in the cleanup process. Quick cleanup may also argue for a generous degree of Regional autonomy, which implies variability of decisions across Regions, at the expense of consistent national program direction.

The direction of SARA to attain at each site the highly protective health-based standards set under other statutes creates time and cost demands that often can be satisfied only at the sacrifice of another statutory objective, prompt and effective action at all sites listed on the NPL. Current estimates (extrapolated from early, and perhaps relatively inexpensive cleanups) suggest that, despite the magnitude of the Fund at $8.5 billion, it contains only a fraction of what will eventually be needed to achieve final cleanup at all currently listed sites. Even if more funds were available, however, the Agency lacks sufficient expert staff, and the Nation enough qualified engineers to take on a full-scale effort at all sites simultaneously. For the moment, the program can pursue either complete cleanup at some sites, or incremental cleanup at many s[illegible] but cannot fully accommodate both goals simultaneously.

Of course, aggressive enforcement will induce responsible parties to bear more of the load, but only if the Fund itself remains sufficiently robust to pose a credible resource for direct Federal action. Used in this manner, the Fund is actually a better threat than a weapon. For this reason, the use of enforcement to multiply Superfund's impact argues against pouring out the Fund to attack too many sites simultaneously.

The challenge to the Agency, then, is to balance such competing goals to achieve necessary cleanup at the most dangerous sites as quickly as possible. EPA must employ novel administrative and technological methods to accelerate the pace, expand the coverage, and improve the quality of the program over time. This will demand patience and wisdom not only from EPA's management and staff, but also from the public.

Americans are learning to view Superfund as a long-term, incremental program exploring new frontiers in the evaluation and mitigation of complex soups of pollutants, many of which lie underground. If EPA is to succeed, it must be confident that Congress and the public will support the Agency's discretionary efforts to administer the law without fear of losing its authority to apply learning from one site to the next. Since EPA is formally entrusted with public stewardship of the program, the Agency depends entirely on the American people's genuine trust and support to carry out that mission.

A CLEAR STRATEGY FOR SUPERFUND

To earn the trust necessary for success, EPA must clarify, communicate, and gain broad acceptance for its fundamental strategy in carrying out the program. This strategy makes it possible to attack the riskiest problems first, removing the sources of immediate threat in a logical and systematic manner, and then turning to sources of remaining long-term risk on a priority basis. The strategy squarely confronts the need to set a deliberate pace toward final remediation of residual problems posing less immediate risks than those commanding nearer-term action. In this way the strategy articulates a clear direction for management of Fund resources in order to achieve the greatest environmental improvement possible from a combination of public and private resources over the long-term.

While the body of the report provides necessary detail, in brief the Task Group's proposed strategy embodies this vision:

Make Sites Safer--Control Acute Threats Immediately

EPA's first priority under Superfund is to render hazardous waste sites stable and eliminate any immediate endangerment to citizens. Under this "safety first" dictum, sites presenting the most acute risk to human health will receive the earliest and most aggressive action.

Effective immediately, the Administrator will direct each Regional Office to do a removal assessment at each site on the National Priority List. This assessment will look at the environmental and public health impacts of each site, and will be used to determine what action--to include immediate removal action or enforcement action where viable and liable responsible parties have been identified--must be taken to render each site safe from immediate hazards to public health and the environment. EPA will be in the field fast, sizing up the scope of the problem and taking the necessary action to assure that the site is made safe in the short-term. Information gathered from the site assessment will be added to establish priorities for longer-term remediation action necessary to complete cleanup.

Make Sites Cleaner--Worst Sites, Worst Problems First

After abating immediate threats, EPA will conduct the earliest remedial work for those problems at sites that retain high priority when compared with competing problems across the Nation. EPA will typically plan action toward final cleanup at each site in deliberate stages to provide additional or longer-term improvements toward final cleanup.

Carefully Monitor and Maintain Sites Over the Long-Term

EPA will not walk away from its obligation to protect human health and the environment at each and every NPL site. The Agency will carefully monitor and maintain sites over the long-term to ensure that sites remain safe. If EPA selects a remedy where hazardous substances remain on-site, EPA will conduct a review at least every five years after the initiation of the remedial action. Based on that review, EPA will take action at the site if necessary to protect human health and the environment. EPA will report annually the results of all five year reviews that were conducted during the preceding twelve month period and will modify current policy so that no site, where hazardous substances remain, will be deleted from the NPL following a final cleanup that meets health and environmental goals until at least one five year review is conducted and the review indicates that the remedy remains protective of human health and the environment.

Emphasize Enforcement to Induce Private-Party Cleanup

EPA will emphasize enforcement to induce potentially responsible parties (PRPs) to carry out more cleanups under EPA direction. Our objective will be to either rapidly achieve enforceable agreements by PRPs to carry out cleanups or, where such agreements are not reached, to order PRPs to carry out cleanups at every NPL site where responsible parties can be found. In doing so, the Agency will expand both its use of coercive enforcement measures and its use of more flexible settlement procedures provided by the 1986 amendments. PRPs choosing to undertake cleanup, even under threat of enforcement action, can expect close cooperation from EPA to move from planning to field remediation as quickly as possible.

Develop and Use New Technologies For More Effective Cleanup

To ensure cleanups provide long-term protection of human health and the environment, EPA will use permanent remedies where possible and aggressively seek innovative treatment technologies that reduce the toxicity, mobility, and volume of wastes at Superfund sites. To accelerate the use of promising experimental treatment methods, EPA will initiate a more far-reaching and comprehensive program of technical assistance and support to those evaluating and selecting site remedies.

Improve Efficiency of Program Operations

While the nature of the program militates against short-cuts, EPA will simplify some costly and time-consuming procedures at many sites without loss of programmatic quality or completeness. In addition, EPA's site managers will seek greater procedural efficiency and programmatic effect by employing a "One Program" concept. This means EPA will match the most appropriate tools available to the environmental problems to be corrected, regardless of whether the project is being managed through the Fund or under an enforcement settlement.

Encourage Full Participation by Communities

EPA will re-energize its outreach to encourage broad-scale public information and involvement in program decisions. The Agency will pay more attention than in the past to involving the community in selecting remedies in the growing number of projects conducted by PRPs under enforcement settlements. The Agency needs people directly affected by the program to share in realistic expectations, and to assist the Agency in reaching appropriate, cost-effective cleanup decisions that do not compromise environmental goals.

Foster Cooperation with State Agencies and with the Natural Resource Trustees and the Agency for Toxic Substance and Disease Registry (ATSDR)

EPA recognizes that others have a significant role to play in the Superfund process, primarily the States and the Natural Resource Damage Trustees. In addition to implementing the recommendations in this report, one of the Agency's principal goals should be to build a solid relationship with the States, Trustees and ATSDR to ensure that the Superfund process is working as efficiently and cooperatively as possible.

THE CHALLENGE AHEAD

Superfund's problems are tough and will not be soon or easily solved. Balancing competing statutory goals, getting the most from an apparently huge but actually limited resource pool, rewarding and retaining a top-notch Federal technical staff, and ensuring first-rate work in the public interest by teams of contractors with divided interests, while only parts of the challenge, nevertheless make up a formidable agenda. For EPA's management and staff, however, this report confirms that with a shared understanding of the true nature and scope of the problem, all parties to the program can work more effectively and harmoniously to achieve Superfund's essential national goals.

I. A CLEAR STRATEGY FOR SUPERFUND

CHAPTER I

MEETING THE PUBLIC'S EXPECTATIONS: A CLEAR STRATEGY FOR SUPERFUND

Congress and the American people have had high expectations for Superfund but are generally disappointed by the results of the program. There have been many accomplishments in Superfund in recent years through the often unrecognized accomplishments of competent, dedicated Superfund managers and staff. But there has also been limited public knowledge or acceptance of the program's success at a national level. This not only suggests that EPA needs to more effectively communicate program achievements but also that EPA needs to resolve the lack of congruence between what the public expects from Superfund and what EPA believes can be delivered. The lack of public trust and EPA's inability to establish and maintain credibility led the task group to examine the public's expectations for the Superfund program and the factors that affect EPA's ability to meet these expectations.

As the task group set out to identify what the "public" expects from Superfund, we targeted our efforts on those who have a stake in the success of the program. This includes:

- the affected public -- people who reside near Superfund sites.
- frontline EPA employees -- EPA employees in the field such as the remedial project managers, on-scene coordinators, and enforcement attorneys.
- progressive potentially responsible parties (PRPs) -- those parties who are potentially liable for cleanup that are willing to meet their obligations under the law.
- the general public -- individual citizens as well as industry and environmental groups who are concerned that Superfund is successful in carrying out cleanup and that Trust Fund dollars are well spent.
- Congress and State and local governments -- parties who play a direct role as co-implementors of the program (e.g., who maintain a budget or oversight role or who share responsibility for getting sites cleaned up).

In summary, these are the groups whose expectations are crucial to the success of the program. To better identify the expectations of these groups, the task group analyzed more than thirty recent studies and reports on the program. We also conducted numerous interviews with citizens near sites, national environmental organizations, Congressional House and Senate staff, State officials, EPA management and staff, EPA contractors, and companies who are responsible parties at Superfund sites.

Through these analyses and interviews, the task group identified what different people expect from the program. The task group also identified several barriers to meeting those expectations and developed a strategy to guide EPA in implementing the program. The overriding goal in articulating what people expect from Superfund -- and in designing a strategy for implementing the program -- has been to improve EPA's ability to effectively manage the program and to regain the public's trust in our ability to do so. This chapter presents the findings and makes recommendations which the task group believes will help Superfund achieve its statutory goals and become a success in the eyes of Congress and the American people.

THE PUBLIC'S EXPECTATIONS

People interested in Superfund vary in their opinions on what they consider important to program success. However, the task group found that several expectations are common to most people. At the most basic level, people want the site cleaned up now. A closer examination shows that they care about action, timeliness, quality, risk reduction, enforcement, cost, innovative technologies, and a participatory process.

Action

The public wants actions taken at many more sites on the National Priorities List (NPL) that show measurable and visible environmental results. "Action" refers to removal or remedial actions that remove or remedy the contamination resulting in a site cleanup. The concern for action is expressed in a number of different ways. Some people are concerned that once a site is listed on the NPL that EPA is not in the field quickly enough initiating response actions. Others are concerned that actions must lead to sites being deleted from the NPL.

Timeliness

The public is frustrated by the slow pace of site cleanup. Many people encourage the initiation of actions as early in the process as possible to enhance the responsiveness and efficiency of the program. Others noted that progress is impeded by a number of different elements. For example, the process of investigating site contamination and analyzing alternatives for cleaning up the site (known as the remedial investigation/feasibility study or RI/FS) is cumbersome, lengthy negotiations or litigation can cause delays in cleanup, and overwhelming workloads on EPA personnel can slow down site action.

Quality

The public wants "quality" work at sites. However, "quality" means different things to different people. Many people believed that "quality" means the selection of remedies that result in permanent solutions to site problems. Some interpret "quality" to mean use of treatment and innovative technologies. Still others see "quality" as the selection of actions that are appropriate to meet the site conditions and remedy the problem. Others believe consistency in the "quality" of the work is important and were concerned about the "quality" of the document which contains EPA's decision on the selection of the remedy.

Risk Reduction

The public wants to be protected from the risks associated with living near a site. Some people recommended reducing, controlling, and eliminating risks as soon as possible. People are particularly concerned about the perceived health effects and view risk in terms of whether they can drink the water, whether their children play in the yard, and whether the river is safe for fishing or swimming. There are disconnects between how people living near Superfund sites view and talk about risks and how EPA staff perceive, and communicate, them.

Enforcement

Many people want more enforcement and endorse an "enforcement-first" approach. Enforcement-first means that parties who are potentially liable for cleanup (known as potentially responsible parties or PRPs) would be doing more cleanups in lieu of government-financed actions. People believe having the PRPs do the work will result in more site cleanups. This is important because people believe Trust Fund revenues are not sufficient to take a public works approach to Superfund cleanup. EPA was also admonished for not aggressively using the full set of enforcement authorities provided by the Superfund amendments. On the other hand, some people expressed distrust in allowing PRPs to conduct actions at sites. They noted that the quality of documents prepared by PRPs and contractors are sometimes mediocre and that work or studies must often be redone.

Cost

Many people are concerned about the escalating costs of the program both for the RI/FS and the actual design and implementation of the remedy (known as the remedial design/ remedial action or RD/RA). Some people suggested that EPA could benefit from years of experience and obtain some cost savings by streamlining studies, where appropriate. PRPs indicated that their costs should not be greater than if the site is cleaned up by the Fund. Others are concerned about EPA's consideration of cost-effectiveness in remedy selection, asserting that protecting public health rather than cost-effectiveness should drive the selection of the remedy.

Innovative Technologies

Some people want greater use of innovative technologies and criticize EPA for relying on older, proven, and sometimes less permanent technologies. There is also concern about a perceived lack of an EPA commitment to encouraging the research and development of innovative technologies. Some suggested that the existing EPA program for the development and demonstration of innovative technologies (the SITE program) could be more effectively integrated into Superfund. However, others believe that using "unproven" technologies at sites could be risky.

Participatory Process

The public -- especially States, communities affected by sites, and PRPs -- want greater and earlier involvement in Superfund actions. Regional offices indicated that their community relations efforts at sites have been most successful when they initiate early citizen involvement well before the formal public comment period. PRPs want early participation in the settlement process and want a stronger EPA commitment to early information sharing to nurture effective negotiations and rapid settlements.

BARRIERS TO MEETING THE PUBLIC'S EXPECTATIONS

The public's expectations reflect important concerns. However, several barriers limit EPA's ability to fully meet all of the public's expectations. First, barriers to meeting the public's expectations exist because many of the expectations compete with one another. While not mutually exclusive, the competing expectations require EPA to strike a balance among them, in some cases making difficult choices or trade-offs based on key program objectives. Next, there are constraints as to what EPA can accomplish given the size of the problem and the resources available for cleanup. Finally, there are limits to the availability of technologies that are suitable for cleanup.

Competing Expectations

Timely Cleanup Versus Participatory Decisions

The public expects sites to be cleaned up in a timely fashion. The public also expects to have substantial and meaningful involvement in the decision-making process. However, the cleanup process is a lengthy one that involves complex problems, uncertainty in data, and different opinions on how to address the problem. Building a consensus among citizens, the PRPs, and the government is essential but inevitably takes time to achieve. The more people involved in the decision, the more time it generally takes to reach a consensus.

Decentralization Versus National Consistency

Because Superfund is a national program, the public expects consistency in program operations (e.g., in remedy selection, in cleanup standards, and in implementation of settlement and enforcement policies). To speed action, however, EPA has decentralized the implementation of the Superfund program by delegating substantial decision-making authority to the Regions. Decentralization removes the encumbrance of additional layers of review but provides the potential for inconsistent actions.

Complete Cleanup Versus Cleanup In Stages

Deleting a site from the NPL has been used as the only meaningful measure of cleanup. The expectation that EPA should be deleting more sites encourages an approach that moves sites to final remediation now and discourages an approach that emphasizes addressing sites in stages. Some regions are cautious about proceeding to clean up sites in stages because they are uncertain about how these steps will relate to comprehensive solutions at the site. Because resources are finite, an emphasis that focuses on completely cleaning up sites now results in cleanup at fewer sites whereas emphasis on cleaning up sites in stages results in reducing risks or making progress toward cleanup at many more sites.

Fund Versus Enforcement

The quickest action taken for any given site may involve using the Trust Fund to finance government cleanup action. But Congress provided EPA with a range of enforcement and settlement tools to ensure PRP cleanup of sites. If the goal of the Superfund program is to clean up sites as quickly as possible, then Fund-financed response may be the best mechanism. Additional time and effort are typically needed when using enforcement or settlement approaches to cleanup. For example, it is often a lengthy process to negotiate a settlement or to enforce efforts to compel PRP cleanup through litigation.

Achieving Targets Versus Environmental Results

Congress and the public expect environmental results from Superfund cleanups, but they also expect the Agency to meet statutory deadlines (or targets) for preliminary assessments and site investigations as well as for initiating RI/FSs and remedial actions. Achieving targets can mean trade-offs with achieving environmental results. Targets are numerical goals that do not measure quality, timeliness or risk reduction. Program success is frequently measured by reaching targets, such as studies and referrals, rather than actual cleanup actions or enforceable commitments to cleanup actions.

Permanence Versus Technology Constraints

Congress and the public expect site remedies to meet the statutory requirement to use permanent technologies, to the maximum extent practicable. However, judgments differ about what is practicable and the use of such technologies may not be compatible with legitimate technological constraints. For example, cost-effective permanent technologies have not been developed for some difficult problems, such as decontaminating large areas of contaminated soils or groundwater aquifers. In addition, some people favor the use of new and innovative technologies while others are concerned that such technologies, which have either not been previously used or that have had limited practical application, will be unsafe and ineffective.

Size of the Problem and Resource Constraints

The Problem Is Big

The scope and complexity of Superfund are far greater than originally imagined. When the program was created in 1980, Congress and the public viewed Superfund as a short-term response to a short-term problem of cleaning up abandoned hazardous waste sites. The past nine years have revealed the true nature and extent of the hazardous waste site problem. Superfund has become a long-term program in response to our growing understanding about the scope of the problem.

EPA now knows that many thousands of sites must be evaluated to determine which are serious enough to warrant inclusion on the NPL and that many of these sites will be addressed under Superfund. Currently, sites are added to the NPL at a rate that exceeds the rate of cleanup. We also know that much more time is required to clean up individual sites than originally expected. The task of cleaning up the current NPL alone will take many more decades.

Some numbers will put this issue into perspective. EPA's list of sites to evaluate for possible inclusion on the NPL now contains 31,000 sites (an average of 2,000 new sites a year). EPA has historically listed on the NPL about five percent of the sites it has evaluated. In 1986, the evaluation list stood at about 25,000 sites; EPA had completed the decision process on just over 6,200 sites; 703 were on the NPL; and about 5,500 were eliminated from consideration. EPA has now identified some 1,200 sites as proposed or final on the NPL and has determined that about 16,000 others are not NPL candidates. EPA has made major strides in addressing the evaluation backlog, but much remains to be done.

The task of cleaning up the current NPL will take many more years, considering the amount of funding available and the time it takes to complete some actions. At the present rate of funding, EPA can start about 40 construction projects per year. PRPs are financing another 50 or so per year. With the NPL now standing at nearly 1,200 sites, over 250 have been financed to start construction. It will take a number of years to initiate construction at the remaining NPL sites. While cleanup action may take four to five years at some sites, it can take decades at others. In cases of extensive ground-water contamination, long-term pump and treat response actions are often projected to take 20 to 30 years, and in some cases up to 50 years.

The Trust Fund Is Finite

Federal dollars alone cannot clean up all of the sites on the NPL. The Trust Fund's current authorization of $8.5 billion is not sufficient to address the problems at sites on the current NPL, much less those that eventually will be listed. The cost of cleanup is escalating and now approaches $25 million for construction costs at each site. The current projected total cost of construction for all sites on the current NPL is $30 billion. PRPs are expected to pay for 50% of such costs. Superfund's success will require a joint effort that includes the States as co-implementors, and the responsible parties as full contributors.

The Pipeline Is Full

Activities in all parts of the cleanup process (referred to as the remedial pipeline) from pre-remedial through remedial action have been conducted at a record rate since the passage of the Superfund amendments in 1986. The capability of the Federal government to manage the pipeline of activities that must be conducted to achieve cleanup at sites is essentially full. Resource problems are likely to continue to constrain program activities across the entire pipeline and will require EPA to make hard choices among competing program objectives. This means EPA is now reaching a stage of Superfund development where we can no longer take a "fire house" approach to site cleanup; that is, deal with sites on a "first-come, first-served" basis.

The fact that the remedial pipeline is full is currently demonstrated by the large number of post-1986 remedial projects that are entering the construction phase. Even with high levels of PRP participation in the program, there are insufficient funds to construct all projects that are and will be ready to move into construction. EPA's Superfund managers are now grappling with issues such as: how to decide what projects to move to construction and what projects to place on "hold"; and how to move projects forward into construction while effectively maximizing PRP involvement.

Technological Constraints

There is a need to develop innovative technologies and to remove existing program constraints to their use at Superfund sites. Various studies have stressed the need for long-term, reliable, and cost-effective treatment technologies that will permanently clean up hazardous waste sites. However, these same studies point out that the demand for treatment often outstrips the availability and capability of existing treatment technologies. The fact that demand is far greater than currently available technologies exacerbates EPA's problems in trying to use permanent technologies at some sites in the near term. Managing Superfund as the long-term program it has become will allow time for innovative technologies to be developed, demonstrated, and made available for commercial use.

A SUPERFUND STRATEGY

Because there are competing public expectations for Superfund and because there are important resource and technological constraints, EPA should adopt a strategy to manage its environmental priorities and to establish an operating framework for implementing the program. This strategy must take into account the public's concerns without escalating or creating expectations that cannot be met. An environmental priorities approach for the Superfund program is important because it will help EPA strike a balance among competing public expectations and deal with resource and technological constraints.

EPA's overriding goal is to protect human health and the environment. EPA is obligated and firmly committed to reaching final cleanup that meets health and environmental standards at all NPL sites. EPA will continue to remediate sites until final cleanup goals are met. However, EPA cannot do everything at once. There are neither the resources nor the technologies to achieve final remediation at every site on the NPL in the near term. In fact, final cleanup objectives may not be reached at a particular site for a long time (e.g., especially site conditions that include large areas of contaminated soils and contaminated groundwater aquifers).

EPA can, however, do a better job in remediating sites toward final cleanup by fully implementing an environmental priorities approach to cleanup. The basic philosophy of this approach, which is already under development in the Superfund program office, is to more effectively and efficiently use both Fund and private party resources to address the worst sites and the worst problems first. This means EPA will balance priorities among sites to ensure that the sites with the greatest health or environmental risks are addressed first. EPA will then continually reduce risks at sites until the final site goals are met.

Important factors that help guide this priority-setting scheme include:

* human health and environmental considerations that are clearly paramount to the program.

* pragmatic considerations that are tied to resource and technological constraints. This may include such questions as: Given resource and technological constraints, what is the best method for addressing the site and how quickly can cleanup be completed?

* early action considerations that emphasize the importance of taking actions in stages that are fully consistent with the final site goals as early in the cleanup process as possible.

The strategy consists of eight major elements. The first three elements are the environmental goals of the cleanup process: making sites "safer" and "cleaner" as well as monitoring and maintaining sites to ensure they remain safe. The additional five elements are the means EPA will use to achieve "safer" and "cleaner" sites: more enforcement to get more PRP cleanups, greater development and use of permanent and innovative technologies, more efficiency in program operations, greater public participation, and greater cooperation with State agencies and natural resource trustees.

Environmental Goals

Make Sites Safer -- Control Acute Threats Immediately

EPA will be in the field fast, sizing up the scope of the problem and undertaking whatever removal or remedial action is needed right away. EPA's first priority is to get into the field early to abate the immediate threat to human health and the environment at all NPL sites. Sites presenting the most acute risk to human health and the environment will receive the earliest action to prevent the spread of contamination and to control or reduce the risk. Focusing efforts on mitigating immediate threats ensures that we are making sites "safer" in the short-term.

Effective immediately, the Administrator will direct each Regional office to do an environmental and public health assessment at each NPL site. This assessment will look at the environmental and public health impacts of each site, and will be used to determine what action, including an immediate removal action or enforcement action where viable and liable responsible parties have been identified, must be taken to render each site safe from immediate hazards to the public health and the environment. EPA will then initiate the necessary action to assure that the site is made safe in the short-term. Information gathered from the assessment will be added to established priorities for longer-term remedial action necessary to complete cleanup.

Action may be taken under removal or remedial authorities as appropriate and must be consistent with the final remedy. Examples of such actions are: removing drum and tank waste for treatment or incineration; providing an alternative water supply; and removing waste for interim storage where this improves stabilization of a site. Making sites "safer" could also include implementing rapid remedial solutions to sites where they are available and that could be taken after appropriate study but before a full RI/FS is initiated. This approach would correct the most apparent and immediate site threats very early in the process.

Make Sites Cleaner -- Worst Sites, Worst Problems First

After abating the immediate threat, EPA will initiate the earliest remedial work to address those problems that retain high priority when compared with competing problems at other sites. In many cases, EPA will take action in deliberate stages that will result in continuous improvements until the site is finally cleaned up to health and environmental standards. Cleaning up sites in stages often makes sense for tackling the worst problems first and for doing quickly what can be done without delay. Nevertheless, EPA expects that some sites will be treated in the traditional way, with one RI/FS and one remedial action. At all sites, especially where cleanup occurs in stages, EPA will remain engaged in work at the site until final cleanup is achieved. Cleaning up sites in stages toward final cleanup ensures that we are making sites "cleaner" in the long-term.

Remediating sites in stages is a concept that means implementing response actions in increments to provide additional or longer-term improvements toward cleanup. In practice, cleaning up in stages may include taking one or more removal actions (short-term actions that typically address emergencies or immediate threats), followed by a longer-term remedial action. Another example is the use of "operable units" that divide a site into separate problems with independent response actions. Still another example is the use of an "expedited response action" that describes a partial cleanup that may be done before the final remedy is selected. "Expedited response actions" must, nevertheless, be fully consistent with the final remedy.

Depending on site conditions, EPA will take actions to initially prevent exposure and/or control risk; further actions will be taken to reduce and/or eliminate risk. For example, actions may be taken to prevent the spread of contamination, such as using caps, berms, and slurry walls; other actions may be taken to initiate ground-water pump and treat systems for contaminated plumes; still other actions may use incineration or bio-remediation to treat hot spots and fully clean up the contamination for a portion of the site.

EPA will achieve "safer" and "cleaner" sites while striving to meet final site goals at as many NPL sites as soon as possible. Achieving "safer" sites and "cleaner" sites are not mutually exclusive goals or activities. A removal action taken to mitigate an immediate threat can often remediate a portion of a site's problem. All actions to achieve "safer" and "cleaner" sites are important accomplishments toward final site cleanup. Our goal is to reduce risk as quickly as possible throughout the cleanup process.

Carefully Monitor and Maintain Sites Over the Long-Term

EPA will carefully monitor sites over the long-term to ensure that the remedy at each site is fully protective of human health and the environment. As part of our effort to monitor site conditions, EPA will conduct a review of all sites at least every five years after the initiation of the remedial action where hazardous substances remain on site to ensure that human health and the environment are being protected as required by the statute. EPA will also maintain the effectiveness of the remedy over the long-term by promptly correcting any additional problems that may arise at sites where our monitoring indicates that further response actions are necessary to protect human health and the environment.

To assure the public that EPA is carefully monitoring and maintaining each site, EPA will report annually the results of all five year reviews that were conducted during the preceding twelve month period. EPA will also modify Agency policy so that no site, where hazardous substances remain, will be deleted from the NPL until at least one five year review is conducted and the review indicates that the remedy remains protective of human health and the environment.

Means to Achieve Environmental Goals

Emphasize Enforcement to Induce Private Party Cleanup

EPA will encourage or compel PRPs to do more work to increase the total number of cleanups. Our objective is to either rapidly achieve enforceable agreements by PRPs to carry out cleanups or, where such agreements are not reached, to order PRPs to carry out cleanups at every NPL site where responsible parties can be found. The goal is to mobilize private party resources to conduct cleanup up front, rather than using the Fund and recovering costs through litigation later. To obtain more PRP cleanups, EPA will increase the use of enforcement and settlement authorities, leverage the Fund, and improve case support.

For example, EPA will increase the issuance of administrative orders to compel PRPs to do the work that meet human health and environmental goals. EPA will improve the collection and exchange of information and enforce information requests as well as increase resources and provide incentives for the Regions to use settlement tools that encourage PRPs to participate in the settlement process. In addition, EPA will increase the ability to shift funds among sites to achieve maximum leverage to use the Fund to establish a credible threat that if negotiations fail the Fund will be used in selected cases to finance cleanup with cost-recovery and possible treble damages to follow. Finally, the Agency will ensure the proper skill mix and consider organizational adjustments to improve case support for enforcement actions. (See Chapter II "Strengthening Enforcement and Maximizing Responsible Party Work at Superfund Sites").

Develop and Use New Technologies for More Effective Cleanup

EPA will use permanent technologies to achieve final site goals, to the maximum extent practicable. EPA will protect human health and the environment from long-term potential hazards and will use permanent technologies where they are proven, cost-effective, and available to achieve final site goals that protect human health and the environment. In many cases, attaining final site goals that involve the use of permanent technologies may be accomplished in the near term (e.g., at sites where surface contamination may be biologically treated or incinerated). In other cases, attaining final site goals will take more time.

Although EPA has increased the use of treatment technologies at sites, the current range of available treatment technologies does not meet the demand for such technologies. To address this demand, EPA will conduct more research and development of innovative treatment technologies to enhance its ability to meet the statutory preference for treatment and use of permanent technologies. In particular, EPA will expand the research, development and demonstration of new technologies; evaluate existing and emerging technologies; and encourage the use of emerging technologies through an aggressive technical assistance program for Regional project managers. EPA will also make every effort to eliminate internal barriers to the demonstration and use of innovative technologies. (See Chapter IV "Bringing Innovative Technology to Bear on Pollution at Superfund Sites to Strengthen Remedy Selection").

Improve Efficiency of Program Operations

EPA will improve the efficiency of program operations for achieving "safer" and "cleaner" sites by integrating the Fund and enforcement aspects of the program. A "One Superfund Program" concept means that all sites would be treated the same. It means using one site manager for both Fund and enforcement activities and using all available mechanisms for encouraging PRPs to do the work. EPA will also better define the roles of the Regional project managers and provide them with additional technical and administrative support. (See Chapter II "Strengthening Enforcement and Maximizing Responsible Party Work at Superfund Sites" and Chapter III "Accelerating and Improving Remedial Action").

Encourage Full Participation by Communities

All phases of the program will benefit from greater public participation. EPA will increase the role of citizens in Superfund decisions, especially at PRP sites; encourage consistent communication with citizens; and reform the Technical Assistance Grants program to eliminate barriers to its use. EPA will also advocate an increased national effort to inform the public on Superfund's progress; involve the public in policy and implementation issues; and increase efforts to measure program progress towards environmental results (See Chapter V "An Aggressive Program of Community Involvement" and Chapter VII "Accounting for Achievement: Communicating Progress to the Public").

Foster Cooperation With State Agencies, Natural Resource Trustees, and ATSDR

EPA recognizes that State agencies and natural resource trustees, including the Forest Service, the Fish and Wildlife Service, the National Park Service, and the National Oceanic and Atmospheric Administration, have a significant role in the Superfund program. EPA will work with State agencies, natural resource trustees and ATSDR to ensure an effective and cooperative relationship.

WHAT DOES THE STRATEGY DO FOR THE SUPERFUND PROGRAM AND HOW WILL IT HELP EPA MEET THE PUBLIC'S EXPECTATIONS?

The task group believes that the development of a clear strategy for the Superfund program is essential because it provides the operating context necessary to help guide EPA in improving our implementation of the program. The strategy is also equally essential because it contains EPA's message to the public on how EPA will attempt to be responsive to their concerns and expectations for the program.

The strategy does not propose that EPA make major structural changes to the existing Superfund program. The task group believes that making such changes would be disruptive, counterproductive, and unnecessary. The basic structure of the Superfund program is sound and should be retained. However, the task group strongly believes that EPA has important choices to make about where to place the emphasis of the program and that substantial improvements in implementation which reflect the overall goals of the program can and should be made now. For this reason, the strategy has been designed to shift the emphasis of the program in the following key respects:

* EPA will focus more intently on setting and managing environmental priorities, with a special emphasis on taking early actions. This is demonstrated by our commitment to controlling acute problems first then initiating high priority longer-term response actions, typically in stages of cleanup, until health and environmental standards are met.

* EPA will make greater use of enforcement authorities to compel private parties to conduct the cleanup up-front in lieu of Fund-financed action and cost-recovery through litigation later.

There are other key advantages to our approach for ensuring better Superfund cleanups. For example, the strategy renews EPA's commitment to monitoring and maintaining site remedies to ensure safety over the long-term, and to encouraging more effective public participation. We also optimize the use of not just one, but a range of technologies and allow for the cost-effective use of different technologies. Finally, the strategy recognizes that cleanups are multi-year, multi-stage activities.

The central theme or message of the strategy is that EPA is attempting to be responsive to the public's concerns and to meet the public's expectations. EPA acknowledges this as an important challenge, in light of competing expectations and significant resource and technological constraints. The task group has made a concerted effort to be candid about what we believe EPA can realistically achieve and how we believe EPA should achieve it.

Although EPA cannot meet every expectation nor reconcile every competing expectation, EPA can do a better job of responding to the public's concerns. For example, we believe that EPA can more fully meet the public's expectation that EPA conduct work which shows measurable and visible environmental results. EPA can do this by taking early actions and by taking actions in stages. In addition, the task group believes that EPA can better meet the public's expectation for meaningful public participation. EPA can do this by creating opportunities at every site for early and continuous citizen involvement throughout the cleanup process, and by removing barriers to the use of technical assistance grants.

These and other expectations can be addressed more fully even in light of resource and technological constraints. EPA can do this by better identifying and addressing our environmental priorities, and by fostering the development and use of innovative technologies.

The task group also believes that although competing expectations do add to the complexity of the program, EPA can do a better job of striking a balance between them. In fact, the strategy was specifically designed to do this. For example, we attempt to reconcile the competing expectation between the desire to achieve complete cleanup with the need to conduct cleanup in stages. The strategy sets complete cleanup as EPA's long-term goal for each site and uses cleanup in stages as the means to achieve this long-term goal.

The strategy also attempts to reconcile the competing expectation that EPA use the Fund to achieve cleanups faster with the need to mobilize PRP resources through an "enforcement-first" approach. We will orient the program toward greater use of enforcement authorities to mobilize PRP resources but also allow for Fund-financed actions where emergencies exist, where there are no viable PRPs, or where it is appropriate to use the Fund to establish a credible threat that EPA will act if negotiations fail.

As a final example, the strategy attempts to reconcile the competing expectation that EPA use permanent technologies with the limitation imposed on us by the inadequate range of good technologies. EPA will use permanent technologies when they are proven, cost-effective, and available. But we will also improve our ability to make better future use of such technologies by removing administrative barriers to their use as well as by renewing EPA's commitment to fostering research and development of innovative technologies.

In summary, the strategy is not a magic device that will instantly allow EPA to fully meet all of the public's expectations. Nor will it automatically result in the implementation of a perfect Superfund program. Nevertheless, the strategy does take many of the public's expectations into account, does strike a balance among key competing expectations, does address important resource and technological constraints, and does provide a clear framework to guide the implementation of the program. Taken together, the task group believes that by using this strategy, EPA and the public will see significant improvements not only in the implementation of the program but in added benefits to human health and environment that the program was created to address. What EPA seeks now is public acceptance of this approach and room to operate in a supportive environment.

II. STRENGTHENING ENFORCEMENT AND MAXIMIZING RESPONSIBLE PARTY WORK AT SUPERFUND SITES

CHAPTER II

STRENGTHENING ENFORCEMENT AND MAXIMIZING RESPONSIBLE PARTY WORK AT SUPERFUND SITES

This chapter is the report of the task group on Enforcement and Maximizing PRP Work. This report reflects a review of a variety of recent studies on the Superfund program, as well as ongoing management initiatives involving EPA and the Department of Justice, such as the Superfund Settlement Incentives and Disincentives Workgroup and the Superfund Enforcement Management Issues Workgroup. It also reflects discussions with individuals and groups involved in the Superfund program, including EPA Regional and Headquarters personnel, representatives of the Department of Justice, Congressional staff, as well as industry, citizen and environmental groups.

The conclusions in this chapter are those of the task group and do not necessarily reflect the positions of everyone who participated in its development. The task group did not attempt to respond specifically to all of the comments in individual studies, nor to attribute particular positions to particular groups. The chapter has been drafted without reference to specific negotiations or cases, because of the confidential nature of much of that material.

This chapter does not attempt to comprehensively address each aspect of the Superfund enforcement program. Certain topics, such as administrative records and State relationships, are not covered. Rather, this report is an attempt to describe the overall direction of the program, to make a few specific recommendations for midcourse corrections, and to address issues of particular concern that have been raised in discussions and reports. This report was requested by top Agency management, but it is also intended to respond to the recent critiques of the Superfund enforcement program, to the issues raised by the many constituencies interested in Superfund, and to the concerns of the Federal employees working in the program.

This chapter sets out 12 recommendations to strengthen enforcement and increase private party response. These recommendations involve increased use of enforcement and settlement authorities, better integration of enforcement and Fund-financed cleanup activities, improved case management and case support, stronger responsible party oversight and cost recovery, and better intergovernmental coordination. The chapter consists of an overview of the recommendations, and more detailed discussions of substantive issues.

SUMMARY

The basic aim of the Superfund program is to place responsibility for cleanup of hazardous waste disposal sites on those who generated the wastes, and those who owned or operated the sites. If the government conducts the cleanup using money from the Fund, that purpose can be accomplished through cost recovery. The statute also provides enforcement tools that the government can use to directly compel responsible parties to conduct the cleanup. Where responsible parties are willing to assume that responsibility on a cooperative basis, settlement agreements provide another means to achieve cleanups that meet human health and environmental goals. Whichever approach is followed, the objective of Superfund enforcement is to reach the goal of placing ultimate responsibility for the costs of cleaning up Superfund sites on those who contributed to the problem. This objective is consistent with the policy of other Federally administered environmental statutes that those who are responsible for pollution should bear the burden of cleaning it up.

The following discussion summarizes the general approach recommended for the Superfund enforcement program. This summary briefly describes the main recommendations, and refers to the section of the report where the issues are discussed in greater detail.

EPA will:

- increase its use of section 106 unilateral administrative orders to compel private party response. (See ENFORCEMENT FOR REMEDIAL DESIGN AND CONSTRUCTION)

- provide resources, remove administrative barriers, and create incentives for use of the settlement tools of CERCLA (e.g., mixed funding, de minimis settlements). (See SETTLEMENT AUTHORITIES)

- integrate the Fund-financed response and enforcement approaches under Superfund. Private party response is the preferred approach for the majority of Superfund sites. (See FUND ENFORCEMENT RELATIONSHIP)

- establish an integrated timeline for both enforcement and response action. The timeline will include deadlines for completing negotiations and following up with enforcement or response action. (See FUND ENFORCEMENT RELATIONSHIP)

- ensure the proper personnel skill mix and consider organizational adjustments to improve case support for enforcement actions. (See CASE SUPPORT)

- ensure effective information collection, information exchange, and enforcement of information requests to encourage Potentially Responsible Party (PRP) participation in the settlement process. (See ENFORCEMENT OF INFORMATION REQUESTS AND INFORMATION EXCHANGE WITH PRPS)

- strengthen its efforts to effectively oversee private party remedial investigations and feasibility studies (RI/FS). (See OVERSIGHT OF PRIVATE PARTY RI/FS)

- retain the maximum amount of leverage to use the Fund where negotiations are unsuccessful. (See FUNDING FLEXIBILITY)

- establish realistic expectations for cost recovery, develop a removal cost recovery strategy, and conduct a rulemaking to strengthen the ability to recover costs. (See COST RECOVERY)

- with the Department of Justice, establish a case management planning process to expedite enforcement and settlement decision making. (See INTERGOVERNMENTAL COORDINATION)

ENFORCEMENT FOR REMEDIAL DESIGN AND CONSTRUCTION

FINDING: Unilateral administrative orders under Section 106 of CERCLA are an incentive for settlement, serve as a useful preliminary to judicial enforcement, and establish a case for treble damages when EPA proceeds with Fund-financed response. They can be used to compel response actions if negotiations do not result in settlement. They are also useful in situations where EPA has reached a partial settlement with some but not all of the PRPs at a site. Orders can be issued to compel recalcitrants to conduct certain discrete phases of the work at a site, or to cooperate with the settling parties conducting the cleanup. Additional judicial enforcement actions against parties who fail to comply with administrative orders will also make the threat of enforcement more credible.

DISCUSSION: Section 106 of CERCLA authorizes administrative orders or judicial action to compel responsible parties to conduct response actions where there is an imminent and substantial endangerment to public health, welfare or the environment. There have been criticisms in recent years that the Federal government has not made adequate use of these authorities. This section of the review discusses where and how such enforcement actions may be useful, actions to take in the event of non-compliance with orders, and steps that might be taken to increase the number of section 106 enforcement actions.

It is essential to distinguish administrative enforcement under section 106 from judicial enforcement under section 106, because these enforcement tools have different impacts on PRPs and different resource implications for the Federal government. EPA is authorized to issue administrative orders to PRPs to compel them to conduct response actions. If PRPs fail to comply with these orders, EPA may refer the case to the Department of Justice (DOJ) for judicial enforcement of the order, or proceed with Fund-financed response. If PRPs fail to comply with an order, and EPA proceeds with Fund-financed response, EPA can pursue treble damages under section 107 of CERCLA. Section 107 authorizes EPA to collect up to three times the cost incurred by the Fund if responsible parties fail to comply with an order. Judicial enforcement may involve an action in court to compel responsible parties to conduct a response action, action in court to enforce compliance with an administrative order, or action to collect penalties for failure to comply with an order.

Role of Section 106 Orders for Remedial Action

The most important role of section 106 orders is to create an enforcement threshold for the program and thereby encourage voluntary private party participation in the settlement process. In many cases, because PRPs have not necessarily violated any statutes, a punitive orientation is not always appropriate for CERCLA enforcement. The primary purpose of the liability scheme is to force cleanup, and enforcement measures will be brought to bear against parties who fail to settle, or who violate administrative orders or judicial decrees.

The liability of PRPs under CERCLA is joint and several, except where PRPs can demonstrate that the harm at the site is divisible. The potential for joint and several liability is a valuable impetus for PRPs to reach the agreements among themselves and with the government that are necessary for successful negotiations. Unilateral judicial enforcement under section 106 has not always been the quickest way of assuring that cleanup starts for any given site, but a certain threshold number of enforcement actions is necessary to establish this authority as a credible threat against PRPs who fail to participate in the settlement process.

Section 106 administrative orders can be a spur to private party cleanup in several respects. They can be useful to compel response actions if negotiations do not result in settlement. They are also useful in situations where EPA has reached a partial settlement with some but not all of the PRPs at a site. Orders can be issued to recalcitrant parties to compel them to conduct a discrete portion of the work at a site. These are sometimes called "carve-out" orders. Orders can also direct the recalcitrant parties to cooperate with the settling parties who are conducting the cleanup.

In these situations, orders serve as an incentive for settlement. They encourage recalcitrants to pay or participate with the settlers, and help to demonstrate the economic consequences of noncompliance to corporate management.

In some cases, the government settles with some PRPs, and takes enforcement action against others. In these situations, it is particularly important that the settlement terms and enforcement actions encourage participation and discourage recalcitrance. The same companies and the same lawyers are involved in many Superfund actions and settlement and enforcement actions are carefully examined for their precedential value for subsequent cases. The 1988 EPA-DOJ conference on Superfund Settlements and Disincentives included a number of specific and detailed recommendations for structuring settlements and enforcement actions to encourage settlement and discourage recalcitrance.

Some PRPs have objected that issuance of an administrative order is a disruption to PRPs, rather than an impetus for settlement. They argue that PRPs subject to orders, or the threat of orders, spend their time figuring out how to respond to the statements in the order, rather than working with the Agency to reach settlement. In other situations, orders have been sought by PRPs to help convince corporate management and insurers of the seriousness of the enforcement action. It is impossible to predict, in any given situation, whether PRPs will react by moving more quickly to reach settlement, or react by moving to defend themselves against the order.

The task group encountered many differing and strongly held views concerning the effectiveness of administrative orders in the Superfund enforcement process. Our view is that routine and predictable issuance of administrative orders in the CERCLA enforcement process will help to bring negotiations to a successful conclusion. The prospect of treble damages or judicial enforcement for PRPs who do not comply with orders is an additional powerful impetus for settlement.

RECOMMENDATION: EPA will increase its use of unilateral administrative orders, particularly for remedial design and remedial action. Our objective will be to either rapidly achieve enforceable agreements by PRPs to carry out cleanups or, where such agreements are not reached, to order PRPs to carry out cleanups at every NPL site where responsible parties can be found. EPA will routinely issue orders to PRPs who are legally liable and financially viable if settlement is not reached after completion of negotiations. Orders will therefore be routinely issued before a case is referred to the Department of Justice for judicial action, or before the Fund is used for remedial design or construction. Where the Fund is used, EPA expects to pursue cost recovery action under section 107, and to seek treble damages where appropriate.

Where the government has reached a partial settlement with cooperating PRPs, it will take prompt enforcement action against viable and liable recalcitrants who have not participated in settlements. This action may be an administrative order under section 106, judicial action under section 106, or an action under section 107 to recover costs incurred by the government. Such action should generally be commenced within 90 days of entering the consent decree before the court. In both the structure of the settlement terms and in its pursuit of enforcement, the government will clearly establish incentives to encourage these PRPs who are willing to assume responsibilities and disincentives for those who will not.

Response to Non-Compliance with Orders

DISCUSSION: If PRPs do not settle and do not comply with orders, the government can proceed with Fund-financed response or judicial enforcement. The task group considered ways to achieve the best balance between these approaches. Commenters generally agreed that section 106 judicial enforcement is not generally the speediest method for assuring cleanup at any given site, but most commenters also agreed that a certain number of judicial enforcement actions are needed to maintain the threat of vigorous enforcement to the PRP community. Different methods were considered for increasing the number of judicial actions.

Increased numbers of orders may lead to increased numbers of judicial actions to enforce them. By routinely issuing administrative orders when settlement is not reached within a reasonable time, EPA may be able to increase the number of judicial referrals for section 106 actions. In addition, there is no guarantee that Fund resources will always be available in situations where PRPs do not comply with orders. When Fund resources are available, cost recovery with the prospect of treble damages is also a legitimate enforcement approach.

The discussions during the Management Review uncovered little support for goals, quotas, or targets for the use of unilateral section 106 judicial enforcement. Past "initiatives" to increase the number of section 106 judicial actions through review of candidate sites to identify prospects for referral have not been very successful.

There were also suggestions that Headquarters increase its control over Fund-financed remedial action to encourage enforcement action. According to this view, Fund financed response may become the path of least resistance and be used too frequently instead of judicial enforcement because of the desire to move promptly ahead with cleanup. Restrictions on Fund-financed response were suggested to assure that unilateral enforcement authorities are given proper consideration. Specific proposals included the following:

- Use of the Fund for remedial action should be contingent on prior issuance of administrative orders, or justification of a decision not to issue administrative orders.

- If the order is not complied with, Headquarters must approve or be consulted on any decision to proceed with Fund-financed response rather than a judicial referral.

RECOMMENDATION: Before Fund-financed response can proceed at a site, a Region must issue an administrative order, or provide a justification for its decision not to issue an order. If PRPs do not comply with the order, the Regions should have the flexibility to determine whether to proceed with Fund-financed response or judicial enforcement action to compel compliance and exact penalties. Regions will consult with Headquarters where PRPs do not comply with an administrative order. In determining whether to enforce the order, EPA will consider the importance of maintaining section 106 judicial enforcement as a credible threat to PRPs, as well as the availability of funds for Agency response.

Litigation Support

DISCUSSION: The task group considered different approaches for improving support of section 106 litigation. Judicial actions are time consuming and resource-intensive, and courts rather than EPA control the pace of activity.

In the future, judicial actions may become somewhat less demanding. Remedy decisions and determinations of imminent and substantial endangerment can be defended on the basis of an administrative record, rather than by expert witnesses.

Nonetheless, an increase in the number of unilateral judicial enforcement actions will increase demands on Agency staff, who will need to be responsive to schedules and demands of courts, as well as accountable for ongoing activities at other sites. These multiple demands can be extraordinarily disruptive to other activities. EPA staff sometimes view themselves as under the control of the courts or DOJ attorneys. National contract funds, and DOJ expert witness funds account for a significant amount of case support, but some support activities can be performed only by Agency staff.

EPA has considered a number of mechanisms for assuring adequate resources to support judicial action. Headquarters could establish a litigation budget set aside of dollars and staff, over and above the Region's regular budget, to Regions which take on the additional litigation workload. Headquarters Support Teams and Cost Recovery Documentation Teams could be established and trained to provide "hands-on" assistance at critical junctures in case preparation. Creation of additional case support capability, as discussed under **Case Support,** should also help to provide additional qualified staff for enforcement support. EPA might also be more willing to adjust internal accountability commitments for other site activities, to the extent that judicial enforcement pulls staff away from other activities. EPA should be prepared to experiment with all of these mechanisms where necessary.

SETTLEMENT AUTHORITIES

FINDING: The SARA amendments added several settlement provisions, including special notice, non-binding allocations of responsibility (NBARs), mixed funding, and de minimis settlements. These provisions were in part a response to complaints that the CERCLA liability scheme was unduly harsh. Today, it has become apparent that EPA has not made widespread use of these settlement tools, despite the Agency's good record in obtaining settlements.

DISCUSSION: The task group considered the need for changes to increase the use of these settlement tools without compromising environmental goals. The section 122 settlement authorities are one set of incentives, along with enforcement authorities and the threat of Fund-financed response, for obtaining voluntary PRP response. Whether or not they are needed at any given site, their use contributes to a national perception of efficiency and fairness. This section will focus in particular on mixed funding under section 122(b), where the Federal government pays for a share of a response action primarily conducted or paid for by PRPs, and de minimis settlements under section 122(g), which are separate settlements with parties who have contributed only small amounts of hazardous substances to a site.

The Federal government has had an encouraging record in reaching settlements since enactment of SARA, as measured by number of response actions and amount of private party resources committed to response action. As of mid-April 1989, EPA had reached 66 settlements for remedial action with an estimated value of almost 900 million dollars.

EPA has made substantial progress in reaching settlements, but has made uneven use of these settlement tools. Some are frequently used. For example, special notice and negotiation moratoriums are provided in the majority of cases, the number of private party RI/FS has increased significantly, and information release to PRPs has improved. Nevertheless, some Agency critics expect more mixed funding, more allocations, or more de minimis settlements. The limited use of these settlement tools can be attributed in part to both attitudes and bureaucratic obstacles.

EPA staff and DOJ attorneys are sometimes reluctant to consider the use of these authorities. The CERCLA settlement tools are seen in some quarters as inconsistent with the statutory scheme of joint and several liability. The lingering effects of past allegations of "sweetheart deals" also discourages consideration of the possibility of compromise.
If EPA is to increase its use of the settlement authorities in the SARA amendments, EPA must also reaffirm its commitment to achieving the public health and environmental goals that are set forth in the statute.

The attitude that these settlement tools are inconsistent with the liability scheme of the statute appears to be diminishing, but pragmatic reasons for avoiding mixed funding and de minimis settlements remain. Some believe that these provisions contribute to delay, are difficult to implement and are not necessary for reaching settlement or for cleaning up sites as quickly as possible. They are also concerned that these settlement tools are resource-intensive, and divert resources from other sites. At times, decisions on whether it is appropriate to use mixed funding or de minimis settlements have been delayed, particularly where the decision would set an important precedent.

A number of factors discourage the use of mixed funding. Requests for mixed funding are frequently made by PRPs, and are often without merit. Hence, it has been difficult to predict and thus budget for potential mixed funding situations. Some Federal procurement requirements are generally imposed when Fund money is expended in a mixed funding arrangement. Headquarters preparation of preauthorization decision documents have led to delays. In some situations, the government is willing to forego past cost as an incentive for settlement, where PRPs are willing to conduct the complete remedial action. This is viewed as a form of "surrogate mixed funding" that avoids the logistical difficulties involved in actually authorizing PRPs to make a claim against the Fund.

There are similar impediments to de minimis settlements. For example, money obtained from de minimis settlors may have to be deposited in the Fund rather than retained by EPA for site cleanup. Nonetheless, de minimis settlements can be particularly useful at complex and difficult sites with dozens or hundreds of PRPs. Because of the time and effort that such sites take, however, settlements with de minimis parties are often seen as burdensome and inefficient, even if the settlement might have been impossible to reach without use of the de minimis tools.

EPA has decentralized its settlement process in order to streamline decision-making. In doing so, EPA has lost some ability to assure that decisions at the Regional level are fully consistent with national policy direction. In the minds of PRPs, this reluctance to use these settlement authorities is sometimes seen as an unwillingness to make sufficient effort to comply with the statute or to facilitate settlement.

These problems can be mitigated by better coordination, and more resources, as discussed elsewhere. In addition, as EPA gets more experience in working with these authorities, EPA is displaying a greater willingness to experiment with new approaches to achieve settlements that do not compromise environmental goals. Nevertheless, it is essential to develop workable incentives for the case attorney and Regional Project Manager (RPM) so they will be willing to take on these issues. EPA should also consider management reforms to simplify the use of these authorities.

A variety of suggestions have surfaced. They include:

- arrangements for a formal appeal by PRPs to Headquarters if they object to Regional decisions;
- accountability commitments for use of these settlement tools;
- "circuit riders" from Headquarters who can work with the Regions in the use of these authorities;
- further education in the need and usefulness of these provisions ("jawboning");
- resource set asides, or supplemental resources for Regions that use these authorities;
- Headquarters reviews, to identify appropriate candidate cases; and
- improved and expedited procedures for Headquarters review of use of these authorities.

The task group's discussions uncovered little support for accountability commitments, or for a fundamental change in the current arrangements for decentralized decision making. There was also a widespread desire to avoid disruptive Headquarters initiatives. Improved education and training, increased resources, and simplification of the review process were generally accepted. Concrete incentives are the best approach for changing the belief that use of these authorities is unnecessary, inappropriate, or unduly burdensome.

There was a general belief that success in the program should not be measured by the use of any particular enforcement or settlement tool. Use of the settlement tools is essential for demonstrating that the settlement process can proceed fairly, just as use of the enforcement tools is essential to demonstrate that recalcitrants cannot avoid the Superfund process. Nevertheless, these authorities are means, and not ends in themselves. Ultimately, the best measure of success in the enforcement program is the timely commitment of PRP resources for response action that meets the requirements of the statute.

RECOMMENDATION: EPA will take the following steps to encourage the use of the settlement tools in the Superfund statute without compromising environmental goals:

First, Headquarters will provide additional assistance and specialized training in the use of these authorities. The assistance should emphasize information transfer among the Regions based on their actual experiences in using or attempting to use these tools.

Second, EPA will develop an incentive system that provides additional support for Regions to use these settlement tools. For example, when a Region indicates that a de minimis settlement is appropriate, additional support in FTE and contract dollars might be provided. Specific amounts could be based on past experience and workload model data.

Third, EPA will establish specific goals for the use of de minimis and mixed funding authorities. EPA should determine if it is possible to set up special accounts in the Regions to cover anticipated mixed funding needs and to allow the Regions to retain de minimis cash-out dollars for the site in which the settlement is reached.

FUND-ENFORCEMENT RELATIONSHIP

Integrating Fund and Enforcement Activities

FINDING: Over the course of the Superfund program, EPA has followed a variety of different approaches for coordinating enforcement activities with Fund-financed cleanup work. Sometimes Fund-financed work took precedence ("shovels first, lawyers later"). Other times, potentially responsible parties were given opportunities to conduct each phase of the response action. At still other times, sites were classified, with some designated for enforcement and others for Fund-financed response. This fluctuation among approaches has been extraordinarily disruptive.

DISCUSSION: The task group has tried to identify a more consistent approach for coordinating site-related work within the program. The intent of the Management review is to arrive at midcourse corrections, and the task group did not consider proposals that would completely ignore major authorities under the current law, such as a pure enforcement approach that does not allow for Fund-financed response, or a pure public works approach.

There is strong support among the Regions and States for increased Fund-enforcement integration. This has been called the "One Superfund Program" concept. The approach is to seek responsible party commitments in the first instance, and spend money when responsible parties are unwilling or unable to commit to cleanup.

Under this approach, Superfund sites are not classified into Fund lead and enforcement lead, but are instead all managed the same way. One site manager, familiar with both response and enforcement activities, would be responsible for the sites all the way through the process whether the PRPs or EPA conducted the response. The site manager would be assisted by support groups with different skill mixes through the integrated cleanup/enforcement process. These groups would be called on as needed to support the site manager. This integrated response and enforcement approach requires a strong matrix management operation. Such an operation is discussed later in this chapter under Case Support.

EPA's current site classification process is not entirely consistent with an integrated program approach. Some opportunities for negotiations with PRPs are provided at virtually every site. However, sites are still frequently classified into Fund or enforcement lead, and remedial design/remedial action (RD/RA) funding is designated only for certain sites. Enforcement lead sites tend to be those where PRPs will conduct the RI/FS. In some situations, the classification process encourages delays at enforcement lead sites, because resources are not available to threaten PRPs with Fund-financed response. With the publication of this report, EPA is moving to abolish its current site classification process and not designate particular sites for Fund use unless a thorough PRP search shows that no financially viable PRPs exist.

Of course, specific amounts needed for Fund-financed response must be identified in order to prepare a budget for EPA and Congress. This process of identifying funding needs should not have the effect of limiting negotiations or enforcement at particular sites, nor should it limit the Agency's ability to threaten Fund-financed response at other sites.

Given the fact that the remedial pipeline is filling up fast and funds are becoming tight, the "One Superfund Program - Enforcement First" approach has received strong support from the Regions. Several Regions have formally reorganized to implement the concept and others are moving in that direction.

For the "One Superfund Program" approach to work, the Regions must be given flexibility to shift funds among sites, and to move quickly between enforcement activities and response activities where necessary. This issue is addressed under **Funding Flexibility**.

RECOMMENDATION: EPA will establish an integrated enforcement and response program. EPA will encourage or compel PRPs to conduct the response action at all sites with viable PRPs before using the Fund, except in emergencies.

Integrated Timeline for Enforcement and Response Action

FINDING: A process involving both enforcement and response activities at the vast majority of sites is complex and susceptible to delays. An "enforcement-first" process is particularly vulnerable to delays if negotiation deadlines are not established, or if they are routinely allowed to slip. Negotiations tend to be more effective where PRPs understand that EPA will cut off negotiations if they fail to settle before the deadline.

DISCUSSION: EPA has established timeframes for accomplishing particular steps of the enforcement and cleanup process. For example, there are negotiation timeframes derived from the provisions of section 122 of CERCLA, and cleanup timeframes derived in part from the statutory goals in section 116. Some individual Regions have timeframes that integrate both enforcement and response activities.

If EPA is to successfully integrate the response and enforcement programs, EPA should establish a single management system that organizes the work and defines when the work can realistically be completed. Routine issuance of orders may add time to the process and delay Fund-financed response in situations where orders are not complied with. An integrated timeline for enforcement and response action will therefore be valuable for minimizing delays and uncertainties in predicting and planning for Fund financed activity. Key steps include:

- Commencing PRP searches at the time that a preliminary assessment is initiated;
- Starting efforts to build liability cases and compile administrative records;
- Issuing information requests and special and general notice letters;
- Initiating negotiations for RI/FS and for RD/RA, where legally liable and financially viable PRPs exist;
- Adhering to negotiation deadlines to push PRP settlements and to avoid delays in the remedial pipeline;

- Routinely issuing administrative orders to legally liable and financially viable PRPs if settlements are not reached;
- Referring a case to the Department of Justice or using the Fund to clean up the site if responsible parties do not comply with the order; and
- Lodging and entering a consent decree if settlement is reached.

RECOMMENDATION: EPA will establish a single integrated timeline for both enforcement and Fund-financed activities. The timeline will include deadlines for completing negotiations and following up with enforcement or response action. The timeline will also reflect program goals for completing phases of the response action, and serve as a benchmark for assessing progress at sites. This timeline will also be the basis of the case management planning process discussed later in this chapter under Intergovernmental Coordination.

CASE SUPPORT

FINDING: Better case management and case support is necessary to implement the "One Superfund Program - Enforcement First" concept, to assure adequate PRP searches and maximum PRP involvement at all Superfund sites, and to support additional enforcement actions. An approach which has proven effective in several Regions is a matrix management system based on a single site manager, familiar with both enforcement and response activities, surrounded by support units that he/she can call on as necessary at different stages of the enforcement and response process. These support units must be held completely accountable for meeting deadlines at the site. No specific form of organization is mandated but it is essential to provide the proper skill mix for enforcement support, and to train and retain skilled enforcement staff.

DISCUSSION: Case support units should include the necessary mix of skills required to complete specific support tasks. EPA needs to devote special attention to making the all-important initial investment of effort and resources needed to get the case management process off to a good start. In light of Superfund's complexity, it is particularly desirable to use highly skilled government enforcement staff, rather than to rely overwhelmingly on contractor support. The types of units and skill mixes needed include:

Legal Units: Lawyers from the Office of Regional Counsel to work with site managers throughout the enforcement and response process.

PRP Search Units: Civil/private investigators to conduct timely and thorough PRP searches and followup with information requests.

Administrative Record Units: Paralegals, records managers, or others to compile and update the administrative record.

Contract Support Units: Contract specialists to relieve site managers of significant amounts of administrative tracking and documentation required for proper site management.

Technical Support Units: Toxicologists, hydrogeologists, geologists, risk assessment experts, to provide the necessary specialized technical experts for remedy and liability questions. These individuals can be made available through special arrangements with the Office of Research and Development, as well as through arrangements with participating contractors.

Cost Recovery Units: Individuals qualified in administrative or financial fields, to build and maintain the cost recovery documentation. The Upward Mobility Program has been effectively used to fill many of these positions.

These units must be adequately staffed to avoid bottlenecks, and they must be accountable for meeting deadlines for expeditious enforcement action. Where these units are located or how they are organized in the Regions is not particularly important. Some may be combined into general support units. For example, Contract Support and Cost Recovery Units could be located in the Management Division. These units must be adequately staffed to avoid bottlenecks, and they must be accountable for meeting deadlines for expeditious enforcement action.

RECOMMENDATION: EPA must ensure a proper skill mix for case management and support of enforcement actions. EPA will encourage the creation of specialized Regional units for enforcement support activities, such as searching for responsible parties, assessing their ability to pay and corporate relationships, coordinating information exchange among PRPs, supporting cost recovery efforts, and developing administrative records.

ENFORCEMENT OF INFORMATION REQUESTS AND INFORMATION EXCHANGE WITH PRPS

FINDING: Section 104(e) of CERCLA authorizes EPA to request information concerning Superfund enforcement and response actions, and to take enforcement actions against persons who fail to comply with these information requests. These information requests are valuable for establishing PRP liability and for encouraging PRP participation in the settlement process.

Section 122(e) of CERCLA provides for EPA to release information to PRPs concerning the other PRPs at the site, the nature of the wastes at the site, and, to the extent such information is available, a volumetric ranking of the wastes by party. Despite the importance of this information, PRPs have described EPA's information release as inconsistent in timeliness and quality.

Enforcement of Information Requests

DISCUSSION: Section 104(e) letters are used extensively by EPA to gather Superfund site information. These letters are typically issued before any response action is taken at a site and may be supplemented through the cost recovery stage of a case. The information is needed by EPA to identify PRPs, document their liability and obtain site-specific information. Timely and accurate responses by PRPs to Agency information requests are vital to the development of a comprehensive data base used by EPA during settlement negotiations, enforcement actions and cost recovery lawsuits.

There is some data to suggest that EPA does not vigorously enforce its information requests. Moreover, there are those who believe that EPA tends to build a case by focusing on parties who respond to information requests, and fails to enforce against parties who do not fully comply with these requests. If this is true, then EPA is sending the wrong message.

Vigorous enforcement of information requests serves several purposes. First, it allows EPA to obtain information that is useful for establishing liability cases, and helpful as well to PRPs in generating acceptable settlement offers. Second, enforcement of information requests provides an opportunity for the government to pursue recalcitrants at an early stage. An early enforcement action encourages recalcitrants to participate in negotiations. In addition, PRPs are more willing to settle when they are assured that other parties are not escaping participation by simply ignoring Agency information requests.

RECOMMENDATION: EPA will develop specific goals and timelines to improve enforcement of information requests. The Agency will provide for use of administrative orders and judicial referrals to compel answers to information requests, and to secure civil penalties or criminal sanctions where appropriate. The Agency will also provide for increased use of its administrative subpoena authority under section 122(e)(3)(B).

Information Release

DISCUSSION: PRP's have maintained that EPA is inconsistent in its approach for releasing information concerning other PRPs and the nature of wastes at a site. PRPs need information to meaningfully participate in the settlement process and to develop settlement offers. The information is also useful to enable PRPs to allocate costs among themselves.

Two types of information concerning other parties are important to PRPs: the compilation of general information indicating the relative share of various PRPs (the "waste-in" list), and specific information that links particular parties to a site. The first can be used to identify other PRPs and relative shares of the various parties. The second is sometimes needed to convince corporate management of the company's own involvement at the site.

EPA faces quite different problems in producing and releasing information concerning liability. "Waste-in" lists require readily available information at the site, and Agency resources to collect and compile it. In some situations, the information may be evidentiary, and EPA may feel that release might compromise potential subsequent enforcement action. Current Regional practice often is reciprocal in nature: EPA will release information concerning liability to the PRPs when PRPs respond to EPA's information requests.

In certain situations, EPA may choose to take a more active role in facilitating or managing the allocation process among PRPs. This approach is more likely to be used in situations where there is an extraordinarily large number of PRPs. Potential options for facilitating allocations among PRPs include Agency funding of neutral parties to aid in dispute resolution, use of nonbinding allocations of responsibility under section 122(e)(3), and more extensive Agency development of information on volume and nature of wastes. The purpose of information release is to facilitate settlement, and any of these approaches may be appropriate, depending on the specific circumstances of the case.

At present, there is no comprehensive picture concerning information release. Anecdotal information indicates that Agency performance has improved, but is uneven. There is general agreement that early release of information can facilitate settlement.

RECOMMENDATION: EPA will prepare a directive that emphasizes the importance of releasing available information as soon as possible to facilitate settlements. Improvements will require guidance, enhanced data bases and additional resources.

OVERSIGHT OF PRIVATE PARTY RI/FS

FINDING: Some commenters have criticized the Agency's policy of allowing private parties to conduct RI/FSs, arguing that this practice results in cheaper, less protective remedies, and that citizens groups have little opportunity for effective involvement in developing the RI/FSs. These critics have suggested that EPA return to earlier policies of discouraging or prohibiting private party RI/FS. There was broad consensus among EPA managers and staff that the Agency needs to put more effort and resources into oversight of RI/FS performed by PRPs.

DISCUSSION: The Superfund law authorizes EPA to give PRPs the opportunity to perform site work at various points in the remedial process, including the RI/FS. In the interest of taking action at as many sites as possible and as an incentive for PRPs to take on the much more expensive RD/RA phase, EPA has actively encouraged qualified PRPs to conduct RI/FSs. PRPs are currently conducting 50 to 60 percent of the RI/FSs at Superfund sites, and if this policy continues, the percentage of PRP lead activity is expected to grow.

When PRPs take the lead on RI/FSs and other site work, the site is assigned to an Agency Regional Project Manager (RPM) who is responsible for ensuring that PRPs follow EPA regulations and policies and adhere to agreed-upon schedules. EPA employs Technical Enforcement Support (TES) contractors for most of the day-to-day oversight. Some commenters believe that oversight costs, particularly those of the third-party contractors required by the statute, are too high. The TES contractors review workplans and other major documents submitted by PRPs and observe PRPs (in most cases, the contractors hired by PRPs) as they conduct site activities. In all cases, EPA selects the actual site remedy and writes the Record of Decision (ROD).

The task group did not independently evaluate PRP activities or work products and has no direct evidence of widespread problems. However, interviews with Regional managers and staff lead to the conclusion that it would be prudent for EPA to carefully examine current approaches to oversight of PRP RI/FSs and make appropriate adjustments where additional actions are called for.

It is clear that PRPs' general incentives and interests in performing site work are different from those of EPA, communities, and States. According to nearly all Regional managers and staff interviewed on this topic, many PRPs try to economize and propose only the most minimal remedial action. Some variations exist, of course; this characterization certainly does not apply to all PRPs. Nonetheless, EPA's basic approach to oversight must first assume that PRPs will try to conduct RI/FSs geared to their interests alone. EPA's credibility with the public and affected communities depends on ensuring that PRP work on RI/FSs is timely, thorough, and does not compromise environmental goals. Many responsible companies understand this simple fact, and have found to be in their own best interest to move beyond minimalist approaches and to work actively with communities and the government.

Regional managers and staff also expressed some concern about the current effectiveness of Agency oversight of PRPs. Although it might be assumed that Fund-lead sites, where EPA is directly in control, would make more demands on an RPM's time, the opposite is usually true. One reason is that the contractor at the site reports to the PRP, not to EPA. Therefore, after EPA reviews the contractor's document and recommends changes, these changes are frequently negotiated with the PRP. As noted elsewhere in this report, RPMs often have difficulty dealing effectively with PRP contractors on technical issues. In many cases, their extensive workloads preclude attention to every site at all times.

Some EPA staff and critics outside the Agency have concluded that PRPs should not be allowed to conduct RI/FSs at all. They argue that EPA should conduct the RI/FSs and then recover costs from PRPs. In some communities, citizens are especially suspicious of work done by PRPs, and assume that EPA and the PRPs are together striving for minimal remedies and costs.

But there are some good reasons for allowing private parties to conduct the RI/FS. First, Congress directed EPA to provide qualified PRPs with an opportunity to perform the RI/FS. Second, if the RI/FSs are done by EPA, the money needed for them will have to be diverted from other activities. Third, PRPs will become more accustomed to dealing with EPA during the course of the RI/FS, and subsequent settlements that do not compromise environmental goals will be easier to reach. Finally, PRP conduct of the RI/FS is an important incentive for PRPs to settle for theRD/RA. All of these reasons are legitimate objectives, provided that the ultimate product--the remedy--protects human health and the environment. Hence, the task group endorses the continuation of PRP RI/FS, with the proviso that the Agency needs to do a better job overseeing the process.

EPA has already begun some initiatives on PRP oversight, including an evaluation of a sample of PRP RI/FSs to identify possible quality problems and the development of guidance on PRP oversight. Proposals to improve EPA's current approach to PRP oversight include requiring more deliverables from PRPs, making greater use of stipulated penalties when performance is poor, using the Corps of Engineers to oversee PRP RI/FSs, and assigning only experienced RPMs to PRP-lead sites. The task group did not evaluate these proposals or suggest different approaches. In light of the increasing number of PRP leads to be conducted in the coming months and the general concerns raised during this study, however, the task group believes that EPA must act quickly to upgrade current oversight practices and, in particular, involve citizens in this process.

RECOMMENDATION: The Agency will expand efforts to promote closer oversight of private party RI/FS, recognizing that the level of oversight will vary depending on the PRP's experience and willingness to assume accountability for their actions. Specific steps should include reducing the workload of RPMs who oversee these studies. The report of the task group on Community Relations has further recommendations concerning citizen involvement in response actions conducted by responsible parties.

FUNDING FLEXIBILITY

FINDING: PRPs are more likely to agree to do the response work when the Region can threaten them with Fund-financed response and subsequent cost recovery if they fail to settle. The ability to move funds among sites within the Region makes this threat more credible. Funds need not be available at every site, if there is sufficient flexibility to move funds among sites.

But regional flexibility must also be balanced with national concerns. If funds for remedial action become scarce, then a national mechanism will be needed for allocating them. A national funding system is also useful in ensuring that money can be promptly spent and not carried over to subsequent years. Regional flexibility may also be affected by notification requirements that reflect Congressional interest in how money is spent.

DISCUSSION: An integrated program should entail greater flexibility in moving resources among sites. Limits on "flexible funding" have been an issue in the Superfund program for over a year. The task group has examined the degree of funding flexibility currently available. "Flexible funding" involves both the ability to move funds between categories of activities, such as remedial design or PRP oversight, and the ability to move funds among sites, when a settlement occurs at a site that is targeted for Fund-financed response.

Once a settlement is reached, it may be useful to shift resources originally targeted for a particular phase of Fund-financed response, such as remedial design, to PRP response activities, such as oversight. EPA has increased its flexibility to make such shifts. Nonetheless, there are some congressional constraints on EPA's ability to move resources among categories of site activity, such as cleanup and enforcement.

The threat of Fund-financed response is a well-recognized incentive for private party response. The ability to move resources among sites makes this threat even more credible. When a site targeted for Fund-financed response instead settles and private parties pay for cleanup, Regions would generally like the flexibility to use this funding as leverage for further PRP cleanups, or to pay for response action at other sites. Funding need not be directly available at every site, but flexibility in moving funds to take advantage of ripening opportunities makes this threat more credible. Funding cuts, of course, make the threat less credible. Many feel that the enforcement program slowed during CERCLA reauthorization because the credibility of the threat of Fund-financed response was not as realistic as it had previously been.

The Regions currently have flexibility in moving design money among sites. The ability to proceed with remedial design also constitutes a useful threat. There is also general agreement that Headquarters has been responsive to Regional requests to move resources among sites.

Problems with leveraging private party response by threatening use of the Fund will increase, however, if overall funds available for remedial design and remedial action are reduced. When settlements are reached, it may be necessary to shift resources to other sites in other Regions based on determinations of national environmental priorities.

RECOMMENDATION: EPA should maximize Regional flexibility in shifting funds among sites, consistent with Congressional constraints and notification requirements. Fund scarcity is a recognized limitation on Regional flexibility. If additional resources become available because of a settlement, Regions should have the opportunity to apply these resources to other high-priority sites within that Region. To the extent practicable, the Regions should also be able to move resources among categories of activities, such as remedial design and PRP oversight, as long as accountability commitments and notification requirements are met.

COST RECOVERY

This section addresses three closely related issues: the types of costs to be pursued, the expectations concerning revenue to be returned to the Fund, and the efficiency of the current process for documenting and recovering costs. Our view is that conflicting and sometimes unrealistic expectations about revenues to be returned to the Fund have forced the Federal government to adopt a process for cost recovery that includes some significant inefficiencies. More realistic expectations for cost recovery should in fact help to maximize the amount of private party revenue available for cleanup.

Types of Costs

FINDING: The Cost Recovery program serves a dual purpose for CERCLA enforcement. It is intended to both recover revenues for the Fund and to encourage voluntary PRP cleanup action by eliminating any incentive for PRPs to allow the government to do the work.

As the courts gradually resolve the fundamental questions of CERCLA liability, PRPs have increasingly focused on the tactic of investigating the documentation supporting EPA's cost recovery program. Some PRPs have also disputed whether certain types of costs, such as the costs of general program administration by EPA, can be legitimately assigned to particular sites.

Rulemaking can be used to identify the specific recoverable costs, the documentation needed to prove EPA's case, and the documents that will be available to PRPs. A cost recovery regulation should make the process more efficient and narrow the scope of potential PRP challenges to the government's cost recovery actions. Enforcement resources can be used more efficiently if issues of recoverability and cost documentation are litigated once in the context of a regulation, rather than case by case in each individual cost recovery action.

DISCUSSION: PRPs are showing a growing propensity to challenge EPA's cost recovery claims. For example, EPA claims for certain "indirect costs" are particularly controversial with some PRPs. Indirect costs are the costs of administering the Superfund program not directly attributable to response action at individual sites. Indirect costs may include Superfund staff training, national program management, Superfund R&D, and preliminary assessments and site investigation work at sites where no further action occurred.

Section 107(a) of CERCLA establishes PRP liability for all costs of a removal or remedial action incurred by EPA that are not inconsistent with the National Contingency Plan (NCP). Although this language authorizes EPA to recover all response costs from PRPs, some PRPs have questioned the legitimacy of characterizing certain "indirect" expenditures as costs of response action. These PRP challenges become more serious as the amount or proportion of indirect costs that EPA claims at a site becomes greater.

EPA has established an indirect cost methodology which can capture these costs and make them subject to cost recovery. Through 1988, EPA had spent $2.6 billion under the program. Of that total, $153 million was captured through the indirect cost methodology, and hence is allocable for cost recovery. Approximately $950 million could also be included in this category through a broader accounting interpretation of indirect costs. But attempts to collect increased amounts of these indirect costs have involved a number of problems in both negotiation and documentation.

PRPs frequently question the fairness of the costs not directly attributable to their specific site. These costs are frequently the subject of extended bargaining in negotiations. The ratio of indirect costs to direct costs has tended to be higher at smaller sites. The ratio has been high enough in some instances that the issue has delayed or discouraged PRP settlement. In addition, the various types of supporting documentation for these costs have not always been easy to develop. There is a risk that diminishing returns will set in if the government makes inordinate efforts to identify, document, and pursue the relatively small portion of these indirect costs that are not integrally related to response action at the site.

EPA must explicitly identify the types of expenditures that will be recovered as indirect costs, and the methodology EPA will use to compute these costs and allocate them among specific sites. This issue must be resolved in order to determine what EPA can expect to recover, and to put PRPs on notice as to what types of costs they will be liable for. Because of the controversy surrounding some of these indirect costs, the large dollar value associated with them, and the difficulty surrounding their recovery, EPA should use its rulemaking authority to develop a regulation to set out the rationale for recovering these costs. The public and PRPs have a legitimate interest in understanding the specific costs that EPA will pursue; rulemaking provides an opportunity to formally solicit outside views.

In applying the statutory standard of demonstrating that costs are not inconsistent with the NCP, the government may identify factors to be considered in determining whether costs are appropriate for pursuit. These factors might include:

-standard accounting practices;
-efficiency in collecting information;
-fairness of attributing costs to a particular site;
-legal precedents for pursuit of costs.

The regulation will serve a number of other purposes in addition to identifying specific types of costs to be recovered. For example, EPA is also receiving increasing numbers of challenges to the documentation used to show that response costs were incurred. In certain cases, monies EPA paid under a given contract may relate to work performed at a number of different sites, and disputes have arisen over which documents properly establish EPA's claims at which sites. The regulation will help to establish the type of documentation needed to establish a valid claim.

The regulation will simplify negotiations and free up legal resources for upfront negotiations and enforcement that will mobilize additional PRP resources for site cleanup. The regulation will also help EPA manage its caseload by limiting the number of issues subject to litigation and discovery in the forthcoming cost recovery cases for large remedial actions.

RECOMMENDATION: EPA will strengthen methods for identifying and documenting costs. To support cost recovery efforts, EPA will initiate rulemaking to identify the types of expenditures appropriate for cost recovery, documents sufficient to prove government costs, and documents to be made available to PRPs, among other purposes.

Cost Recovery Expectations

FINDING: EPA has been criticized for the low rate of recovery of expenditures from the Fund. It has also been criticized for not pursuing all expenditures from the Fund, including those that cannot be attributed to particular sites.

A number of factors are involved in determining the appropriate measure of success for the cost recovery program. First, success should be defined by comparison between amounts recovered and amounts actually available for cost recovery, not total appropriations from the Fund. Second, success should involve consideration of amounts committed by PRPs for response action under settlements, which obviate the need for cost recovery. Finally, it must be recognized that not all Fund expenditures are necessarily suitable for cost recovery.

DISCUSSION: Both Congress and the public expect substantial cost recovery of Fund monies. As of the end of FY 1988, EPA has recovered $104 million of the $2.6 billion expended. EPA has been criticized for this rate of recovery and intends to improve it.

EPA needs to work with external constituencies and oversight bodies to establish both challenging goals and realistic measures of success for the cost recovery program. In the Agency's view, the most appropriate measure of success for the program involves comparison with amounts actually available for cost recovery, and not total appropriations. Simple comparisons of revenues to total amounts authorized for the Fund are misleading. Funds must be authorized and appropriated by Congress, obligated for particular sites, and then spent before cost recovery is possible. Moreover, legally liable and financially viable PRPs must be available. Hence, the comparison between dollars authorized and dollars recovered is not realistic; dollars authorized are not yet ripe for recovery.

The success of the enforcement program must also be measured by dollars committed by PRPs for response action under settlements which obviate the need for cost recovery. The primary emphasis of the enforcement program is on obtaining PRP commitments to conduct the cleanup themselves. If the government is successful in obtaining PRP commitments for cleanup, the Fund will tend to be used more and more for sites with no financially viable PRPs that are not suitable for cost recovery. If the primary focus of the enforcement program is instead to require that all expenditures are recovered, then the Agency will have to forego other opportunities to generate additional revenue through negotiated settlements for private party response, because cost recovery demands have grown too stringent. The various arms of government interested in this issue, including oversight agencies, must come to an understanding on these issues.

It is clear from the preceding discussion that cost recovery and settlement expectations must be considered together. As the discussion of mixed funding indicates, in some situations EPA will take the position that potential claims for past costs may be reasonably compromised, where the result will be a settlement that benefits the public, and is administratively more feasible than other methods of mixed funding.

Finally, not all Fund expenditures are necessarily suitable for cost recovery. For example, the costs attributable to abandoned sites, where the Fund has paid for cleanup and financially viable responsible parties cannot be found, are not assigned to other sites for collection. The rulemaking discussed above will help to better define the types of costs that the Agency can anticipate recovering. In identifying goals and expectations, EPA will solicit the views of Congress and other interested agencies.

RECOMMENDATION: EPA should immediately undertake a study to identify ambitious and realistic goals for the cost recovery program, and communicate them to Congress and the public.

Removal Cost Recovery

FINDING: Under the SARA amendments, the statute of limitations for removal actions where a remedial action has not been initiated is three years after completion of the removal. The need for preparing referrals to DOJ and filing cases with the court before EPA's claim expires puts a significant demand on legal and program staff. These staff may diverted from other activities, such as negotiations and enforcement for response action, in order to meet these deadlines. The return on EPA's effort for removal actions is likely to be smaller than for remedial actions.

DISCUSSION: The issue of efficiency and realistic expectations is also relevant to EPA's process for case selection. EPA's top priorities for cost recovery action are remedial actions, and removal actions valued at over $200,000. EPA continues to pursue certain cases where costs are less than $200,000, in order to maintain a risk of liability for PRPs with relatively small potential exposure. The expiration date for the Agency's claim under the statute of limitations is an important factor in identifying priority sites for cost recovery. The deadline is approaching for a number of removal actions that were begun soon after the enactment of SARA.

EPA anticipates an increased cost recovery workload, because more money is at stake for remedial action, and because an increased number of remedial actions are moving through the pipeline. Therefore, EPA plans to focus efforts on the sites which provide the greatest incentive, and greatest return on revenue received, while developing more efficient methods to pursue smaller cases with less potential revenue.

Some litigation for small cost recoveries is essential in order to maintain the PRP's incentive to settle. EPA must also consider new approaches for cost recovery for removal actions. EPA is considering steps to increase the use of arbitration as provided under section 122(h) along with other forms of alternative dispute resolution to settle small cost recovery cases without litigation. EPA recently promulgated regulations for arbitration under section 122(h). EPA might also increase resources for negotiating and overseeing PRP removal actions, to limit the number of cost recovery actions needed for removals.

RECOMMENDATION: EPA will develop an improved approach for recovery of costs for removal actions. This approach will include a standard Alternative Dispute Resolution opportunity, a real threat of litigation against recalcitrant parties, and increased efforts to have PRPs conduct future removal actions, to reduce the need for subsequent cost recovery actions by the government.

INTERGOVERNMENTAL COORDINATION

FINDING: A number of reports suggested that delays and disputes have resulted from the division of responsibilities for Superfund enforcement. The enforcement process involves multiple layers of review among various Regional and Headquarters offices and between EPA and the Department of Justice, and a number of commenters argue that problems are aggravated by different viewpoints in different organizations. Frequently, all of these organizations responsible for enforcing the Superfund law need to reach agreement in order to allow negotiations or litigation to come to a conclusion.

DISCUSSION: Responsibility for initiating negotiations and developing case referrals is lodged with both Regional technical staff and Regional Counsel, while the Department of Justice is responsible for filing settlements in court and for managing litigation. Several Headquarters offices have responsibility for policy direction and resource management for Superfund enforcement. Proposals for reorganization are outside the scope of this review, but the task group addressed some issues resulting from the division of responsibilities in the enforcement process. Issues include the following:

-Settlement and litigation disputes: Regions and DOJ staff have questioned the effectiveness of the Settlement Decision Committee (SDC). The SDC has no provisions for reaching final agreement except by consensus or by escalating issues to Assistant Administrators and the Assistant Attorney General. The credibility of the SDC is affected by delays in reaching decisions and difficulties in communicating the results to the Regions.

-Accountability: There is frustration in both EPA and DOJ concerning the seeming lack of accountability of the other organization. Some at EPA feel that they have no way to hold DOJ accountable for prompt filing or completion of cases or settlements. On the other hand, DOJ trial attorneys are not always satisfied with their ability to get necessary assistance from EPA. During litigation, courts occasionally extract commitments from trial attorneys for producing particular documents or decisions that are in the hands of EPA. It frequently requires considerable effort for EPA to mobilize and produce these documents, or reach these decisions, and the EPA is not accountable to the court in the same respect as DOJ.

-Technical and legal issues: Technical and legal questions overlap in the enforcement process. Some technical staff argue that lawyers intrude on their technical prerogatives, while attorneys question the sensitivity of technical staff to legal implications of technical work.

-Budget and workload planning: The legal arms of the enforcement process do not view themselves as full partners in the budget planning process. Regional counsel's offices are frequently perceived as underfunded. Counsel involvement may occur late in the process, particularly in issues related to Records of Decision.

-Differing mindsets: Agency staff have perceived differences in mindset between EPA and DOJ, and between technical staff and attorneys, in assessing settlements. There is a sense that DOJ is less inclined to take risks, more willing to countenance delay, demands a greater share of the costs of cleanup than EPA believes is practicable, and requires a higher level of internal signoff before settlements will be accepted.

-Delegations: Recent waivers of Headquarters concurrence for settlements and referrals have reduced internal layers of review. But these waivers have, in turn, raised questions about national consistency concerning the government's use of settlement authorities and interpretations of CERCLA's liability scheme.

Commenters and critics have made a number of proposals for addressing these issues, including:

-SDC: The Settlement Decision Committee would be revitalized and streamlined to resolve EPA-DOJ case specific disputes quickly. Disputes would generally be resolved within one week. Remaining disputes would be routinely escalated to a final decision-maker within EPA.

-"Problem-solver": EPA would create a senior position dedicated to prompt resolution of enforcement or settlement issues among Regions, DOJ, or Headquarters.

-Case management planning: Each Region would institute a case or site management planning process that would define the coordination necessary among offices and Agencies involved in the Superfund process.

-Early DOJ involvement: EPA would provide an explicit opportunity for DOJ involvement in case management planning and in negotiations. DOJ attorneys would be present at negotiations, or provide input by telephone in a timely fashion.

-DOJ involvement in program planning: DOJ would be given increased opportunities for involvement in budget planning and the development of accountability commitments for enforcement.

-DOJ accountability: EPA would use the Superfund Interagency Agreement (IAG) for funding DOJ's Superfund enforcement activity to establish DOJ's accountability for enforcement action. The IAG could also be used to distinguish technical and legal roles.

-Agency accountability: EPA would develop a method for recognizing judicially imposed demands in both resource allocations and in internal Agency accountability systems.

-Delegations review: EPA would establish a review and evaluation process, and issue more detailed guidance to assure proper adherence to delegations.

-Conference: EPA and the Department would convene a top-level conference to assure a consensus on goals for the program and procedures for addressing Superfund settlement and litigation. Among other things, the conference would address the questions of national consistency in the enforcement program and standards for cost recovery.

Most of these recommendations will receive further consideration, but the task group has focused on a subset of them for this report. The recommendations concerning accountability are closely related to resources. There is little advantage in cutting resources of the Department of Justice, even if targets are not met. DOJ attorneys are ultimately accountable to courts, which exercise more control over DOJ's workload than EPA can. The recommendations set out below focus on establishing a shared sense of what the program is intended to accomplish, and clear expectations concerning timing for litigation and settlement.

RECOMMENDATIONS:

Conference: EPA and the Department of Justice should convene a top-level conference to ensure a consensus on goals for the program and procedures for addressing Superfund settlement and litigation issues. Issues that may be addressed include methods for assuring national consistency, and the management process for cost recovery.

Case Management Planning: Each Region will institute a case or site management planning process that will include provisions for coordination among the different offices and organizations at critical stages in the enforcement process. EPA, in consultation with the Department of Justice, will establish a single timeline for the Superfund remedial program that sets out expected timeframes and results for each of the critical stages of the enforcement and remedial process. Regions will have flexibility in establishing the level of detail of their own planning process.

Evaluation: EPA will undertake a formal study of the organization of the Superfund enforcement program to evaluate whether a reorganization among Headquarters offices is appropriate. This study should address, among other things, the question of relationships between the Office of Waste Programs Enforcement (OWPE) and the Office of Enforcement and Compliance Monitoring (OECM); suggestions that the planning and budget functions of OWPE and the Office of Emergency and Remedial Response (OERR) be consolidated; and questions of overlapping responsibilities among OECM, the Office of General Counsel, Regional counsel, and the Department of Justice. As part of this review, EPA should assess implementation of existing delegations of authority to the Regional offices, and the waivers of Headquarters concurrence in referrals of enforcement actions to the Department of Justice.

III. ACCELERATING AND IMPROVING REMEDIAL ACTION

CHAPTER III

ACCELERATING AND IMPROVING REMEDIAL ACTION

INTRODUCTION: The remedial process is the heart of the Superfund program; its purpose is to identify and implement enduring solutions to the environmental problems at uncontrolled hazardous waste sites. Unfortunately, the remedial process is not as efficient or as effective as many people inside and outside EPA think it should be. To some extent, this gap between expectations and reality is a reflection of unrealistic expectations, but, to a larger extent, it is attributable to several factors associated with the legislative mandate for the Superfund program, EPA's interpretation and implementation of that mandate, and resource constraints under which EPA has had to manage the program.

The task group has concluded that EPA can and should take steps to deal with the most significant concerns about the remedial process--including steps to speed up remedial studies, control hazardous waste releases while remedial studies are in progress, and ensure that remedy selection is as consistent as it can be, given the constraints of the law and the complexities of hazardous waste sites. In addition, the task goup has identified steps that can be taken to make technical support more readily accessible to EPA's Regional Offices, to strengthen EPA's oversight of remedial activities undertaken by Potentially Responsible Parties (PRPs), and to improve the remedial process in a number of other ways. The task group's specific findings and recommendations are presented in this chapter.

The task group is not recommending radical changes in the remedial process. More than two years have passed since the enactment of the Superfund Amendments and Reauthorization Act (SARA). While it took a long time for EPA to make the policy changes needed to bring the Superfund program into conformity with SARA (and that process is still under way), a great deal of the groundwork is now in place, and the program is gathering momentum. EPA anticipates, for example, that the required 175 Remedial Actions will be started--either by EPA or by PRPs--by the October 16, 1989, deadline. Also, by March 31, 1989, the number of Remedial Investigations/Feasibility Studies (RI/FS) initiated under SARA had reached 269, only 6 short of the 275 starts required by the upcoming October deadline.

Historically, uncertainty about the direction of the Superfund program and frequent changes in policy and procedure have been among the most significant obstacles to progress. Radical changes at this time could slow down the program once again, while EPA and other Federal and State personnel charged with carrying it out learn and adjust to new approaches. The task group therefore believes that such changes should be made only after their implications have been fully analyzed, and it is clear that their benefits will offset any disruption and delay they may cause.

Background

The remedial process includes the following phases:

- **Remedial Investigation (RI)**: an assessment of the nature and extent of contamination and the associated health and environmental risks.
- **Feasibility Study (FS)**: an analysis of potentially applicable remedial technologies, usually undertaken concurrently with the Remedial Investigation.
- **Remedy selection**: selection of a remedial alternative--often a combination of treatment, containment, and other technologies.
- **Record of Decision (ROD) preparation**: documentation of site conditions and explanation/justification of EPA's remedy selection.
- **Remedial Design (RD)**: preparation of plans and specifications for implementing the chosen remedial alternative.
- **Remedial Action (RA)**: construction or other work necessary to implement the remedial alternative.

Each phase of the remedial process can be undertaken either by EPA or by States--using Superfund dollars--or by PRPs under the supervision of EPA or States.

EPA managers and staff, as well as external groups (such as environmental and community groups and PRPs) have many concerns about the remedial process. Not all groups have the same concerns, but any list of the most common ones would include the following:

- The remedial process is too slow--each step takes too long and actual cleanup often doesn't begin until years after sites are identified.

- EPA's decisions on how much cleanup to undertake and what technologies to use often appear to be inconsistent from one site to another.

- Workloads and turnover among EPA staff responsible for managing or overseeing remedial projects are excessive.

To analyze these and other concerns about the remedial process and to identify possible solutions, the task group examined EPA's management of Fund-financed remedial projects and State management and oversight of remedial projects. The task group focused most of its attention on the first four phases of the remedial process.

The task group's study of the remedial process included interviews with more than seventy-five Superfund managers and staff in EPA's Regional Offices (including many Remedial Project Managers (RPMs), who are directly responsible for management and /or oversight of remedial activities at Superfund sites) and in the Office of Emergency and Remedial Response (OERR), which has primary responsibility for national management of Fund-financed remedial activities and for development of the policies and procedures under which such activities are conducted; meetings with representatives of environmental groups, contractors involved in remedial activities, and Congressional staff; and review of many of the studies of Superfund that have been completed in recent months, as well as numerous other internal and external documents. The task group examined not only external groups' ideas on how to strengthen the remedial process but also a large number of steps that Superfund managers have already taken, including EPA Headquarters initiatives and efforts undertaken by individual Regional Offices.

Resource Implications

Many of the task group's recommendations for strengthening the remedial process have resource implications, particularly the recommendation that RPMs' workloads be reduced. The staff resources needed to implement them could come from an increase in total staffing in the Superfund program, from reallocation of existing resources, or from a reduction in planned accomplishments.

MAKING ACTION A PRIORITY

FINDINGS: Too often, some staff and managers in EPA and other Federal agencies--most of whom are outside the Superfund program itself but who are key participants in portions of the remedial process--are hindering rather than promoting fast action. In large part, these people are responding to their own organizations' priorities rather than to the overriding priority of the Superfund program--cleaning up sites as rapidly as possible. This situation can be reversed only by strong and consistent messages from EPA's leadership and by providing greater incentives for risk-taking and decisive management.

DISCUSSION: The primary purpose of this component of the task group's work was to identify opportunities to improve the pace and quality of action at Superfund sites. Most of the remainder of this chapter addresses specific problems or issues in site assessment, decision-making, and program management. As appropriate, the task group makes recommendations for discrete actions to address these problems.

In conducting its inquiry, however, the task group identified a pervasive, yet subtle, set of forces that may impede progress in Superfund much more than the specific problems addressed in the remainder of this chapter. **The effect of these forces is that relatively few people among the thousands who play some role in implementing the program have unambiguous incentives to keep the program relatively simple, easily implementable, and focused on action.**

This situation is most evident in Regional Office decision-making processes. While most Regional Offices experience some problems in obtaining quick review and approval of key actions, the precise causes of the delays vary greatly across Regional Offices. A common thread that emerged, however, is that **many of the people responsible for providing technical, scientific, or legal advice to Superfund managers and staff are able to hold up actions until their own professional concerns are fully satisfied.**

Perhaps the most egregious example is the case of a Regional Office where commencement of Remedial Investigations/Feasibility Studies (RI/FSs) is routinely delayed for three to six months while the Waste Management Division and the Environmental Services Division debate the contents of site-specific Quality Assurance Project Plans. In other Regional Offices, such problems may involve Office of Regional Counsel staff or technical advisers (such as hydrogeologists, toxicologists, and air pollution modelers) who are in the Waste Management Division but who occupy positions funded at least in part by Superfund. Some Regional Offices have encountered analogous problems with attorneys in the Department of Justice.

Superfund managers and staff complain that many of these people do not share the Superfund staff's accountability for deadlines and are rewarded for providing technical precision in their areas of expertise, rather than for giving Superfund managers and staff advice that can be balanced against the many other factors affecting decisions. The task group found not that Superfund managers and staff want to ignore legitimate scientific, technical, and legal concerns, but rather that they want to assess such concerns in the context of EPA's responsibility to move as quickly as possible from studying and analyzing Superfund sites to taking action at them.

In EPA Headquarters as well, there are people involved in the Superfund program whose primary interests do not coincide with the Regional Offices' responsibility for taking action at hazardous waste sites. The long development time for the proposed revisions to the National Contingency Plan (NCP) is evidence both of the program's complexity and of the fact that limited organizational interests often take precedence over moving the program forward. Similarly, a cursory examination of legal and policy decisions regarding how other Federal statutes will apply to Superfund leads to the conclusion that **EPA tends to choose paths that restrict and complicate program implementation rather than those that take advantage of whatever flexibility and simplicity are available.**

Clearly, Superfund will never be a simple program, and forces affecting it will never lead uniformly to fast action at all sites. Moreover, program participants who may now appear to be impeding progress are in many cases simply responding rationally to their organizations' current reward structures. Nonetheless, it is clear to the task group that developing a more effective Superfund program will require more than the formal changes recommended in the remainder of this chapter. We believe that implementation of those recommendations will be helpful, but we also believe that they will mean little without two more fundamental changes--changes that focus on attitudes and approaches rather than on processes and systems. First, to guide the hundreds of large and small activities that take place in the Superfund program each day, the Agency must establish a clear and overriding emphasis on action. Second, all program participants must develop a strong, shared commitment to the program's mission and feel individually responsible not just for meeting performance targets, but for doing everything possible to support RPMs and to move sites toward cleanup as rapidly as possible.

RECOMMENDATIONS:

The Administrator should take the following steps:

1. **Communicate and regularly reinforce to Superfund managers and staff that the primary mission of the program is to take responsible action at sites as rapidly as possible.**

2. **Communicate the same message to the Attorney General and the heads of other Federal agencies involved in the Superfund program and secure their personal commitment to support EPA's Superfund mission.**

3. **Hold EPA line managers accountable for managing the program in accordance with its primary mission and track their performance in doing so. For example, direct each Regional Administrator to identify and eliminate avoidable delays in Superfund decision-making in his office.**

4. **Direct the development of formal and informal mechanisms to reward innovation, risk-taking, and decisive action in the Superfund program.**

ACCELERATING THE REMEDIAL PROCESS

FINDINGS: Because of technical complexities, statutory and regulatory requirements, and enforcement and cost-recovery concerns, the remedial process is inherently time-consuming.

DISCUSSION:

Technical Complexities

The first phase of the Superfund remedial process is the Remedial Investigation/Feasibility Study (RI/FS) which, as its name indicates, has two distinct but interdependent components. The purpose of the RI, which relies heavily on sample collection and analysis, is to assess the nature and extent of site contamination and the associated health and environmental risks. The purpose of the FS, which relies, in part, on data developed in the RI, is to analyze and evaluate potentially applicable remedial technologies.

RI/FSs are often technically complex undertakings, requiring detailed engineering, hydrogeologic, and exposure/risk testing and analysis. Moreover, hazardous waste sites tend by their very nature to be associated with a level of uncertainty that makes site characterization particularly difficult. There usually is no blueprint of the site showing the physical source or sources of contamination, no road map charting the routes of potential exposure and harm to humans and the environment, and no manifest detailing the nature and extent of contaminants present. Even during the course of the RI/FS, site conditions can change, and previously hidden hazards can emerge, necessitating additional sampling and analysis and a reevaluation of remedial alternatives.

At present, the average RI/FS takes over two years to complete, and some take considerably longer. Nevertheless, the task group found general agreement that severely reducing the RI/FS to a cursory investigation and feasibility analysis at sites where complex contamination and remediation issues exist would result in no overall shortening of the remedial process but would simply shift thorough site and technology evaluation to a subsequent phase. Furthermore, postponing all but superficial investigation until after remedy selection in such cases could weaken the Record of Decision (ROD), requiring time-consuming ROD amendment and complicating negotiations with PRPs, ultimately lengthening the full remedial process. At selected sites, however, it may be appropriate to abbreviate steps in the remedial process; ways to expedite the process in those cases are discussed later in this section.

Because of the frequently extensive and unusual nature of contamination at Superfund sites, as well as SARA's requirement that permanent solutions and alternative treatment technologies be used "to the maximum extent practicable," it is often necessary or advisable to conduct treatability studies to determine whether a proposed remedial technology will prove effective at a site. In the past, treatability studies--which usually take months to complete--were generally not conducted until after the ROD had been signed. OERR has recently recommended that treatability studies, if they are necessary, be conducted during the RI/FS, prior to remedy selection. The task group found strong support for this recommendation. Most of those who commented on this issue believed that although early treatability studies might lengthen the RI/FS, they would not increase the total amount of time the remedial process takes. In addition, they thought that early treatability studies would strengthen the ROD and facilitate negotiations with PRPs by minimizing disagreements over the potential effectiveness of EPA's chosen remedy.

Statutory and Regulatory Requirements

SARA and the NCP impose a variety of requirements that consume significant amounts of time during the remedial process. A number of these requirements are associated with two of the program's fundamental goals: (1) promoting and facilitating voluntary PRP performance or financing of site investigation and remediation and (2) ensuring that affected communities are involved from the outset in developing and selecting site remedies.

To promote settlement with PRPs, for example, SARA includes provisions for special-notice moratoria to allow for formal periods of negotiation between EPA and PRPs: 60 days prior to RI/FS, RD/RA, non-time-critical removal actions, and section 106 enforcement actions. Each of these 60-day moratoria (with the exception of the RI/FS moratorium, which can be extended for 30 days) can be extended for an additional 60 days if a PRP submits a good faith offer during the initial 60-day period.

To ensure that communities have an opportunity to participate in remedy development and selection, as required by SARA, the proposed revisions to the NCP provides for a 30-day notice period for public, including PRP, comment on non-time-critical removal plans, a 30-day-minimum public comment period (extended from 21 days in the current NCP) after publication of the Proposed Plan for remedial action, and a 30-day public comment period prior to the Department of Justice's entry of a judicial consent decree for PRP-financed remedial action.

Provisions such as those noted above are essential to achieving statutory aims, but, in combination, may add months to the remedial process. (Region I has prepared a chart that graphically illustrates how enforcement and other requirements affect the length of the remedial process; the time elapsed from the initiation of PRP search and the initiation of RD/RA is five years.)

Enforcement and Cost-Recovery Concerns

Whenever viable PRPs exist, EPA must be prepared to take action to recover program funds spent at the site. To support cost-recovery actions, EPA has to be able to show that its remedy-selection decision was neither arbitrary nor capricious, and it must be able to provide adequate documentation of costs related to the site. In addition, the Agency must always be prepared to defend its actions in the event of a citizen or State lawsuit challenging the selection of remedy.

The task group found considerable frustration among Regional Office staff and managers with the extensive quality assurance/quality control (QA/QC) and voluminous documentation required throughout the remedial process. Most of those interviewed thought that the level of QA/QC and documentation currently undertaken is excessive for purposes of site remediation; on the other hand, most believed that extensive QA/QC and documentation may be necessary for effective cost-recovery and enforcement efforts. Nearly all agreed that reducing QA/QC and documentation would save some time, but that it would make sense only if EPA is willing to increase its risk of failing in cost-recovery and other legal actions.

FINDING: RPMs' heavy workloads contribute significantly to delays during the remedial process. High staff turnover, particularly among RPMs, also causes delay.

DISCUSSION: The task group found virtual consensus among staff and managers interviewed that a significant--if not the most significant--source of delay during the remedial phase is the heavy workload borne by the typical RPM. (The number of sites an RPM manages varies not only from Regional Office to Regional Office but also from RPM to RPM. It is difficult to gauge an RPM's workload simply by counting the number of sites he or she manages, since sites vary enormously in their complexity and the demands they place on the RPM.)

Staff and managers cited three specific sources of delay that stem from excessive RPM workloads: First, because of competing demands on their time, RPMs cannot always respond quickly to the problems that inevitably arise at technically complex hazardous waste sites. Second, responsibility for multiple sites forces RPMs to focus their attention on major, pressing events, such as ROD preparation, to the detriment of routine, day-to-day management of other sites. Third, heavy workloads make it difficult for RPMs to develop or adhere to long-range site plans.

High staff turnover, particularly RPM turnover, was cited as a problem and a source of delay in nearly every Regional Office. Headquarters estimates that the annual turnover rate among RPMs may be as high as 20 percent. Because the remedial process lasts years, it is not unusual for a single site to have multiple RPMs (as many as four or five) over the course of the RI/FS; with each change, knowledge of the site is lost, and established relationships--with the State, the community, contractors, and others--are broken and must be rebuilt.

FINDING: The remedial process requires the participation of numerous parties outside the Superfund program itself. In many cases, these participants have priorities or are subject to constraints that are at odds with speedy action.

DISCUSSION: Superfund staff and managers interviewed by the task group cited many sources of delay in the remedial process. Although factors noted as significant sources of delay varied somewhat from Regional Office to Regional Office (aside from delays inherent in the program and those associated with RPM workload and turnover), most had one characteristic in common: they involved parties external to the Superfund program--and beyond the control of RPMs and their managers--with priorities and constraints that are often inconsistent with rapid site investigation and remediation. Several of these external sources of delay are discussed below.

State Concurrence

State concurrence with remedy selection is essential if a site is to be moved efficiently through the remedial process. At Fund-lead sites, States are required to finance 10 percent of the cost of remedial action (unless the State is a responsible party, in which case its share is 50 percent). In addition, States must pay 10 percent of any operation and maintenance (O&M) costs for ground-water and surface-water restoration for up to ten years after remedial action is completed and 100 percent thereafter; for all other types of action, States must pay 100 percent of O&M costs as soon as systems are operational. Before remedial action can begin at a Fund-lead site, the State must sign a Superfund State Contract in which it agrees to assume these costs. At enforcement-lead sites, SARA provides that States may withhold concurrence, by intervening in the enforcement action prior to entry of the consent decree, if they believe that the proposed remedial action fails to meet a Federal or State Applicable or Relevant and Appropriate Requirement (ARAR). (See section on remedy selection for a fuller discussion of ARARs.)

Several Regional Offices cited lack of State concurrence with remedy selection as a major delay in moving sites toward remedial action. In some cases, State resistance appears to be cost-related--States are unwilling or unable to assume their share of the cost of the remedial alternative selected or to commit themselves to financing lengthy O&M. In other cases, State resistance stems from differences with EPA concerning feasible or appropriate levels of site cleanup. Whatever the underlying cause, lack of State concurrence can cause substantial delays in the remedial process, including the "shelving" of RODs at Fund-lead sites and lengthy legal battles at enforcement-lead sites.

PRP Participation

A number of Regional Offices noted that PRPs' preference for least-cost remedies impedes progress throughout the remedial process. The problems cited included PRP-lead RI/FSs that were strongly biased toward least-cost remedies; PRP failure to meet RI/FS work schedules; and PRP foot-dragging and recalcitrance during negotiations, often requiring extension of moratorium periods.

Internal Review

Although the number of people outside of the Waste Management Division involved in document review during the remedial process varies from Regional Office to Regional Office, reviewers typically include representatives from the Environmental Services Division, the Office of Regional Counsel, and several program offices.

Superfund staff and managers in several Regional Offices attributed substantial delay to internal review, though there was no consensus regarding which divisions were responsible for bottlenecks in the review process. Two Regional Offices cited slow Office of Regional Counsel review of RODs, one cited intensive Environmental Services Division scrutiny of quality assurance plans, and two cited lengthy review by numerous program offices of various documents as sources of delay. In some cases, slow review was attributed to inadequate resources in reviewing offices. In other cases, it was attributed to priorities at odds with fast action--for example, Office of Regional Counsel's interest in challenge-proof RODs and Environmental Services Division's desire for high-integrity quality assurance plans.

FINDING: The two Regional Offices that have used removal authorities and contractors during the remedial phase to expedite remedial action have found this approach to be workable and effective in appropriate circumstances. Other Regional Offices either support or have no objection to adding this approach to their options for accelerating remedial action.

DISCUSSION: To hasten progress at sites, Regional Offices have sought ways to expedite remedial action. The most frequently used method is to divide a single site into two or more parts--or operable units--so that work can proceed quickly at portions of sites where fast action is essential or where relatively straightforward contamination can be addressed quickly. Although RI/FSs and RODs are required for each operable unit, they are normally less detailed and complex, and therefore less time-consuming, than RI/FSs and RODs for full sites. In some cases, it is not necessary to conduct a discrete RI/FS for each operable unit; instead, two or more operable units are extracted from a single RI/FS undertaken for the full site.

Within the past two years, two Regional Offices--Regions III and IV--have begun using a variant of the operable unit to accelerate site remediation. RD/RA at the typical operable unit is carried out by remedial contractors, since RD/RA is a remedial-phase activity. At selected sites, however, Regions III and IV have used removal contractors for RD/RA. This approach can result in substantial time savings largely because of differences between the types of contracts used for removal and remedial actions. Removal actions are carried out under Emergency Response Cleanup Services contracts, which are time-and-materials contracts. RD/RA has in the past been carried out under Remedial Planning Contractor contracts and will in the future be carried out under Alternative Remedial Contractor Strategy contracts, both of which are fixed-price, level-of-effort contracts.

According to both Regions III and IV, this difference has important implications for the speed with which site action can be undertaken and completed. Removal contractors are able to respond quickly to the many uncertainties and unknowns that are typical of hazardous waste sites because their contract provides that they will be paid whatever the full response action has cost. Remedial contractors, on the other hand, must submit change orders if they encounter conditions that require deviation from the original work plan, which can introduce considerable delay.

Managers in Regions III and IV emphasize that the use of removal contractors is appropriate only for specific types of remedial actions--primarily those involving surface contamination and source control. They agree that this approach is not appropriate for ground-water restoration and long-term treatment activities.

One possible disadvantage of using removal contractors for remedial action is that the capacity of removal contracts may be too limited to accommodate a large number of remedial actions. In addition, EPA's Office of the Inspector General has expressed some concern about the use of removal contractors to carry out remedial actions.

Overall, Regional Office managers and staff expressed support for taking innovative approaches to speed the initiation of cleanup activities, including using removal contractors during the remedial phase under appropriate circumstances. Several Regional Offices, for example, have successfully persuaded PRPs to take early action at enforcement-lead sites where conditions were suitable for expedited cleanup.

FINDING: Superfund staff and managers were unanimous in their support for limiting the number of remedial alternatives considered during the RI/FS process to those with clear potential applicability to site conditions. In addition, there was strong support for development of prototype RI/FS and remedy-selection models for commonly occurring site situations.

DISCUSSION: All Superfund staff and managers interviewed by the task group supported limiting the number of remedial alternatives considered in the RI/FS to those with clear potential effectiveness. This attitude is consistent with the proposed revisions to the NCP, which states the following: "[A] lengthy list of remedial alternatives is not required . . . . The number and type of remedial alternatives should be tailored to fit the site problems being addressed and established remedial action objectives." Recent Headquarters RI/FS-streamlining guidance also calls for limiting the number of remedial alternatives considered.

The task group, however, found widespread belief among RPMs and managers that the number of alternatives being considered remains excessive. Some believed that they were required to consider numerous alternatives, even ones with little potential for success; others indicated that there was little incentive to limit the number of alternatives considered and substantial pressure, often because of enforcement and cost-recovery concerns, to consider numerous alternatives.

Nearly all the Superfund staff and managers interviewed favored development and use of prototype RI/FS and remedy-selection models (sometimes called model or generic remedies) for recurrent site situations such as municipal landfills, battery-cracking sites, and wood-treatment facilities. Such prototypes would be used as a starting point for planning and conducting studies; where conditions at a specific site differ significantly from those built into the model, RPMs would be expected to deviate from the model. Most believed such prototypes would speed the RI/FS and remedy-selection process and would also represent a strong signal from Headquarters that, at least for some sites, consideration of a limited number of remedial alternatives is both appropriate and expected. OERR has recently begun developing a prototype for municipal landfills.

RECOMMENDATIONS:

EPA should take steps to reduce RPMs' workloads. Possible approaches include expanding the Superfund workforce, modifying expected accomplishments, and providing RPMs with additional administrative and technical support.

To accelerate the remedial process, EPA Headquarters should take the following steps:

1. **Encourage Regional Offices to take expedited approaches to site cleanup whenever possible--for example, by using removal contractors during the remedial phase, dividing sites into operable units that facilitate fast action, and encouraging PRPs to finance early remedial measures. Headquarters should monitor the extent to which such approaches are being used and quickly take steps to remove any identified barriers to their use.**

2. **Proceed as rapidly as possible with the development of prototype RI/FS and remedy-selection models for recurring types of sites already identified (municipal landfills, battery-cracking sites, and wood-treatment facilities) and ask Regional Offices to identify other types of sites for which prototypes would be useful.**

3. **Emphasize to Superfund staff and managers and to remedial contractors the existing policy that the number of remedial alternatives considered during the RI/FS should be narrowed as quickly as possible to those with clear potential applicability to the site.**

PROMOTING CONSISTENCY IN REMEDY SELECTION

FINDINGS: EPA has already taken steps to strengthen the remedy-selection process. Additional steps are necessary to foster consistency and more frequent use of permanent remedies and to improve the quality of EPA's Records of Decision. Remedy selection is, however, a process that requires EPA officials to make judgments about complex and controversial matters under a law that requires consideration of various factors that sometimes conflict.

DISCUSSION:

Remedy selection is the process by which EPA officials--usually Regional Administrators--choose among alternative ways to meet SARA's requirements for remedial action at hazardous waste sites. In its inquiry into remedy selection, the task group concentrated on three issues--the use of EPA's nine criteria for assessing and comparing alternative remedies, how SARA's requirements for compliance with ARARs affect remedy selection, and ways in which remedy selection can be made more consistent among similar sites.

The task group's examination of these issues was aimed at determining not only what is being done and how the process could be strengthened, but also how much improvement can reasonably be expected. For this purpose, the task group examined the decision-making process in EPA's Regional Offices and the steps EPA Headquarters offices have already taken to provide policy guidance and technical support for remedy selection and to oversee and evaluate the Regional Offices' remedy-selection decisions. The task group did not actually examine or analyze decisions that have been made at Superfund sites, though it did review and consider OERR's recently completed analysis of fiscal 1988 RODs.

Clearly, some potentially fruitful steps have been taken. Because it will take some time for results to be apparent, the task group can offer only a preliminary assessment. Nevertheless, it seems clear that some additional steps would be productive; specific recommendations are presented below.

Nine Criteria

EPA has taken a number of steps to provide increased assurance that Regional Administrators' remedy selection decisions satisfy SARA requirements. One such step was the formulation of a set of nine criteria to be used in assessing and comparing remedial alternatives. These criteria were first articulated in a memorandum issued in July 1987. They are included in the proposed revisions to the NCP (together with additional explanation of how decision-makers should use them in evaluating remedial alternatives) and thus have been subject to public review and comment. EPA currently is analyzing the public comments and deciding whether to modify the NCP before promulgating it. Accordingly, it would be inappropriate for the task group to offer any comments on the nine criteria, per se.

The task group did attempt to determine, however, whether and how Regional Offices use the nine criteria and whether they need additional guidance on their use. Regional Office managers and staff clearly regard the criteria as useful, because they translate SARA requirements into a practical tool for evaluation of remedial alternatives. In some Regional Offices, however, there seems to be a tendency to use the nine criteria mainly to verify the acceptability of those remedial alternatives that have informally been judged most suitable based on experience, expert advice, and RI/FS results. In any case, there is a high level of awareness in the Regional Offices that the criteria are intended to help them ensure that their decisions satisfy SARA requirements. OERR's analysis of fiscal 1988 RODs provided evidence to support this conclusion; of the RODs evaluated, nearly 80 percent addressed all nine criteria. The task group believes that additional experience with the criteria, coupled with implementation of the recommendations made in this report, will result in real improvements in remedy-selection decisions.

Consistency: Current and Planned Initiatives

EPA has been criticized for inconsistencies in its remedy selections at Superfund sites. External groups maintain that remedies should be similar at sites that are similar. EPA managers recognize that inconsistency can and does occur (in part because of SARA requirements and other factors, as discussed below), though they do not agree that it is as common or significant as external groups have contended. Nevertheless, both EPA Headquarters and some Regional Offices have taken some steps to reduce inconsistency--including steps designed to provide information in advance of remedy selection and/or feedback based on either real-time or retrospective review of remedy-selection decisions.

Giving Regional Office managers and staff easy access to information about past remedy-selection decisions clearly could promote consistency. Such information is presented in the RODs that document and explain all remedy selections. EPA has been assembling and distributing copies of RODs and ROD abstracts for some time. A step to provide this information in a more easily retrievable form was taken in September 1988 with the introduction of an automated database containing the full texts of RODs. All fiscal 1986 and 1987 RODs and about one-half of those completed in fiscal 1988 are now in the database. EPA staff members and contractors have access to it and can use it to obtain the full texts of RODs or to conduct searches for specific information. Thus far, the Regional Offices' use of the database has been limited, largely because it still does not contain all recent RODs and because many Regional Office staff have not had formal training in its use. While the use of the database does not guarantee consistency in remedy selection, it at least offers Regional Offices a relatively easy means of comparing remedy selections at similar sites.

EPA Headquarters also is instituting a Quality Control program for RODs. This initiative is designed to give the Regional Offices a framework for review of RODs before they are signed.

EPA Headquarters recently conducted a retrospective analysis of a sample of RODs completed in fiscal 1988. This analysis focused on the quality of RODs, in terms of measures such as the extent to which the RODs presented a complete rationale for the decisions they described. While evaluating RODs in such terms clearly is important, this retrospective review also could be a means by which EPA Headquarters could identify trends in remedy-selection decisions. Follow-up discussions with Regional Office managers and staff could include both positive and negative feedback, as appropriate. Such an evaluation of remedy-selection trends, coupled with the type of analysis already being performed, could serve not only to improve the Regional Offices' documentation and explanation of remedy-selection decisions, but also to give EPA Headquarters managers opportunities to provide concrete advice about remedy selection from a national perspective. In addition, making the results of these analyses widely available would facilitate public understanding and discussion of EPA's decision-making process.

Peer reviews of remedy-selection decisions also could foster consistency--provided such reviews are performed before decisions are final. Some Regional Offices have set up formal or informal peer review processes (in addition to the normal chain-of-command reviews) that often involve scientific and technical experts from various groups, including those involved in protection of air, water, and ground-water quality. Such reviews within a Regional Office certainly could promote consistency in remedy selection for sites within that Regional Office's jurisdiction. Their effectiveness in fostering consistency nationwide obviously will be limited unless peer reviewers are aware of remedy-selection decisions elsewhere in the country--awareness that could be acquired through personal communications with people in other Regional Offices and through use of the ROD database.

In addition, while EPA Headquarters does not formally participate in many remedy-selection decisions, the Regional Coordinators in OERR and the Office of Waste Programs Enforcement (OWPE) can help promote consistency by reviewing drafts of Proposed Plans (by which Regional Offices obtain public comment on the remedial alternatives they are most likely to choose) and RODs. Currently, however, the Regional Coordinators often do not have time to perform more than a cursory review of many of these documents.

A common theme in the task group's discussions with Regional Office managers and staff--whenever the consistency issue was raised--was the need to have a clear statement of EPA's expectations about remedy selection. An initial version of such a statement appeared in the preamble to the proposed revision of the National Contingency Plan (see Federal Register, Vol. 53, No. 245, December 21, 1988, pages 51422-51423). EPA currently is considering how best to codify and communicate the content of this statement.

Limitations on Consistency

Clearly, EPA's interests are served by doing everything it reasonably can do to promote compliance with SARA requirements and consistency in remedy selection. Even so, the Agency's remedy-selection decisions will not satisfy all interested parties in all cases--nor is it reasonable to expect that they will. EPA has been criticized for decentralizing remedy selection--delegating it to Regional Administrators in most cases. The task group believes, however, that either returning this responsibility to EPA Headquarters or requiring Headquarters concurrence in all remedy-selection decisions would significantly slow down the Superfund program and--more significantly--would tend to isolate decision-making from the citizens most affected by it and the Regional Office managers and staff who are most knowledgeable about site conditions.

Furthermore, EPA has to be wary of allowing or encouraging expectations about consistency in remedy selection to rise to a level not called for by SARA, not reasonable in dealing with hundreds of hazardous waste sites that differ in many respects, and probably not attainable under a statute that requires consideration of several factors that militate against consistency in remedy selection and are in conflict with one another, in some cases. For instance, the statutory requirement to comply with State ARARs--which may vary significantly from one State to another--makes consistency difficult to achieve. In addition, Superfund sites differ so much in terms of factors that affect the practicability of alternative remedies, such as size, geology, and waste composition, that it may not always be feasible to use similar remedies at sites with similar routes of human exposure or similar health risks.

ARARs

SARA requires that remedies selected at Superfund sites comply with ARARs established under Federal or State environmental laws. Federal or State requirements are **applicable** to a Superfund site if they would otherwise be legally applicable to the types of hazardous waste, types of action being taken, or other circumstances at the site. They are **relevant and appropriate** if, while not applicable, they deal with problems sufficiently similar to those existing at the site that they are well suited for use in selecting a remedy for the site. State requirements are ARARs only if they are more stringent than corresponding Federal requirements.

Regional Office managers and staff identified two major problems arising from the statutory requirement for compliance with ARARs. One is that it often is difficult to determine whether environmental laws and regulations--especially those established by States--that do not meet the "applicable" test are "relevant and appropriate" for Superfund sites. In this regard, a question that arises frequently is whether States are consistently applying--in their own environmental protection programs--standards and regulations they identify as ARARs. There is a widespread perception among Regional Office managers and staff that ARARs--especially those in the "relevant and appropriate" category--add more to the cost than to the public health benefits of remedial actions in many cases.

The ARAR-related problem clearly considered most significant by the Regional Offices is the question of when and where the land disposal restrictions being established by EPA under the Resource Conservation and Recovery Act (RCRA) are ARARs. There is widespread concern and confusion among Regional Office managers and staff about the extent to which they must comply with RCRA requirements for treatment of waste that is to be land-disposed. There is also a widely shared view that the RCRA treatment requirements often dictate the selection of remedies that are technologically impracticable (reflecting the difficulty of treating contaminated soil and debris to comply with treatment standards based on what is technologically feasible for concentrated waste streams). There also are many uncertainties and unresolved issues surrounding the interpretation and implementation of SARA provisions allowing ARAR waivers and RCRA provisions allowing variances from treatment requirements. As a result, these statutory approaches to ARAR compliance rarely are used.

EPA has issued some policy guidance on RCRA issues (including a memorandum issued in April 1989 that deals with the question of when the RCRA land disposal requirements are "applicable" but leaves many other issues unresolved) and is developing more. In addition, an effort has been underway for about three years to develop RCRA treatment standards for contaminated soil and debris, but key issues remain unresolved. Historically, disagreement among senior managers in the Superfund and RCRA programs has been the principal stumbling block in the way of efforts to furnish the Regional Offices definitive guidance. With many issues unresolved, there is at least a potential for Regional Offices to make inconsistent decisions on questions about the application of RCRA requirements to Superfund sites.

RECOMMENDATIONS:

To promote consistency in remedy selection--and emphasize the statutory preference for permanent remedies--the Office of Emergency and Remedial Response, in cooperation with the Office of Waste Programs Enforcement, should take the following actions:

1. **Provide real-time feedback on proposed remedy-selection decisions by ensuring that Regional Coordinators in the two offices have time to review drafts of Proposed Plans--which identify the remedial alternative likely to be chosen for a Superfund site--and Records of Decision.**

2. **As part of overseeing Regional Office activities, examine remedy-selection decisions from a national perspective by conducting regular reviews to identify any trends that run counter to statutory requirements or EPA's expectations and by clearly communicating the results of these reviews to EPA's Regional Administrators. Such reviews could be part of a productive relationship between EPA Headquarters and Regional Offices.**

3. **Ensure that the Regional Offices have information on previous remedy-selection decisions by keeping the Record of Decision database updated; ensure that all RPMs are trained to use it and have access to it.**

To promote consistency in remedy selection, compliance with statutory mandates, and appropriate consideration of available factual and analytical data about site conditions and potentially applicable remedial technologies, the Regional Offices should take the following actions:

1. **Within those Regional Offices that have not already done so, establish peer review processes for drafts of Proposed Plans and draft Records of Decision.**

2. **Ensure that RPMs check the Record of Decision database before making any recommendations on remedy selection; where a recommended remedy materially differs from those previously selected for similar sites, require that RPMs be prepared to present the rationale for the difference.**

To minimize uncertainty and confusion about Applicable or Relevant and Appropriate Requirements of Federal environmental laws, the Offices of Emergency and Remedial Response and Waste Programs Enforcement, in cooperation with other EPA Program Offices, should take the following actions as quickly as possible:

1. **Resolve all outstanding questions about the applicability or relevance and appropriateness of Federal standards and regulations, especially those promulgated under the Resource Conservation and Recovery Act.**

2. **Ensure that the Regional Offices participate in decision-making on these issues and that the results of the decision-making process are clearly communicated to all Regional Office managers and staff in Superfund and other affected EPA programs.**

REGIONAL COORDINATORS

FINDINGS: Regional Office staff need a point of contact in EPA Headquarters to obtain answers to policy and technical questions, as well as advice on consistency of proposed remedies. Regional Coordinators in Headquarters offices can meet this need if their roles are strengthened and upgraded.

DISCUSSION: Several staff members in OERR and OWPE serve as Regional Coordinators. The coordinators in OERR are responsible for one of two areas--RI/FS and ROD, or RD/RA; the OWPE coordinators are similarly split. Most Regional Coordinators have two or more Regional Offices to cover. Their responsibilities to the Regional Office staff include answering policy questions on, for example, ARARs (or referring questions to someone else who can respond); answering and referring technical questions on topics such as the use of particular remedies; and reviewing and advising

Regional Office staff on Proposed Plans and RODs. Most of the coordinators' contacts with Regional Office staff are by telephone, and most of the calls they receive are from RPMs. Another major responsibility of Regional Coordinators is to help Headquarters managers obtain information from the Regional Offices. For example, Regional Coordinators may be asked to gather information about controversial sites or as preparation for Congressional testimony. All Regional Coordinators have additional responsibilities; most of them spend 10 to 50 percent of their time on coordination duties. Regional Coordinators meet weekly to discuss issues that Regional Office staff have raised, and they use these meetings to promote consistency in the answers they provide.

When the position of Regional Coordinator was first created, a large part of the Regional Coordinators' role was to review and recommend Headquarters action on RODs. Since the approval of RODs was delegated to the Regional Offices, however, Headquarters' formal concurrence role no longer exists, except in a very limited number of cases. When ROD approval was delegated to the Regional Offices, Regional Coordinators' duties were reduced from full- to part-time.

The task group found great support among Regional Office managers and staff for the function of Regional Coordinators, but concerns about how the role is currently being filled. First, the fact that Regional Coordinators have taken on responsibilities in addition to their coordination role has necessarily reduced their ability to be responsive to RPMs. This, in turn, has led some RPMs to hesitate to call Regional Coordinators, under the assumption that they will be too busy to assist or will do so to the detriment of other work. Second, since the Regional Coordinator function was scaled back, turnover has increased. New Regional Coordinators, even if they are familiar with some aspects of the Superfund program, naturally cannot provide the same quality of guidance and assistance that a Regional Coordinator with several years of experience can. Third, no one in EPA's Office of Solid Waste and Emergency Response is responsible for knowing about all the technical support services available to RPMs (see section on technical support). Regional Coordinators may be aware of some, but not all, of these services. It would be logical to assign Regional Coordinators this coordination function, or to have the Office of Research and Development perform it.

Despite the present emphasis in Headquarters and the trend for Regional Offices to integrate Fund and enforcement activities, questions on Fund-lead sites currently go to OERR coordinators, and those on enforcement-lead sites to OWPE coordinators. Since many Regional Offices now have geographic-based branches in which Fund- and enforcement-lead functions are integrated, it would be easier for RPMs if areas of responsibility for Regional Coordinators were also further integrated.

RECOMMENDATIONS:

To strengthen the role and effectiveness of Regional Coordinators, the Office of Emergency and Remedial Response and the Office of Waste Programs Enforcement should take the following steps:

1. **To increase the retention of Regional Coordinators and to improve the quality of the services they provide, upgrade these positions, assign experienced staff to them, and assure that Regional Coordinators have sufficient time to be responsive to requests from the Regional Offices.**

2. **Direct technical and procedural questions relating to the planning and conduct of remedial activities to Regional Coordinators in the Office of Emergency and Remedial Response and legal and enforcement questions to Regional Coordinators in the Office of Waste Programs Enforcement. Consider an eventual merger of the two groups of Regional Coordinators at EPA Headquarters.**

3. **Publicize within EPA the existence and role of Regional Coordinators and aggressively encourage RPMs to call on Regional Coordinators for assistance.**

PROVIDING TECHNICAL SUPPORT

FINDINGS: The range of technical support services available to RPMs is expanding. RPMs generally are able to obtain the technical support they need to keep their projects going, but they often are not aware of what is available or how to obtain it. In short, technical support is not made available to RPMs as efficiently or effectively as it should be.

DISCUSSION: Technical support is the means by which RPMs get the advice and information they need to resolve the many scientific and technical questions that arise at Superfund sites--questions dealing with matters such as sampling and analysis methods, risk assessment, and waste treatment technology. Technical support for RPMs is essential. Though many of them have degrees in science or engineering, they cannot be expected to have all the scientific and technical expertise needed to do their jobs properly unless they have assistance from other sources.

Typically, when RPMs need technical advice, they begin by consulting their supervisors, other RPMs, or members of a technical support group in the Superfund program, if there is such a group. Then, either because these people cannot provide answers or have suggested other sources, RPMs may consult people in other groups in their Regional Office, including people in the RCRA and ground-water protection programs or in Environmental Services Division, which generally has expertise in environmental sampling and analysis. An RPM's search also may encompass experts elsewhere in EPA and may involve the use of automated databases.

The trouble is not that technical support is unavailable; indeed, the number and range of technical support services available to RPMs have increased significantly within the past two years. Within the Superfund program, there are now technical support groups in several Regional Offices. EPA's Office of Research and Development (ORD) has established four Technical Support Centers to provide advice about assessment and remediation of ground-water contamination, treatment of hazardous waste, sampling and analysis at hazardous waste sites, and assessment of ecological risks. The Technical Support Centers reflect a general increase in ORD's responsiveness to needs for technical support in the Superfund program. OERR also has undertaken or sponsored a number of other technical support efforts, including the creation of Biological and Technical Assistance Groups in virtually all Regional Offices; these groups provide scientific and technical advice on ecological risk analysis. ORD is setting up a clearinghouse for information on hazardous waste treatment technology. Regional Forums in the areas of engineering and treatment and ground-water fate and transport have been established to improve communication among Regional Offices and to help in routing requests for technical advice and assistance.

Despite these initiatives, RPMs often must spend too much time searching for answers. Some of the existing technical support services are not well publicized. In some instances, RPMs may find that designated experts already have more requests awaiting their attention than they can satisfy (which is why some technical support services are not widely publicized). In some cases, people involved in other environmental programs in the Regional Offices that are staffed to provide specific types of technical support to the Superfund program (e.g., reviews of RI/FS reports or RODs) do not share the sense of urgency with which Superfund operates; thus, their responses may be belated or substantively insufficient.

In general, the technical support services available to RPMs are not organized for efficiency. They seem to have proliferated rapidly but not in accordance with any master plan. As a result, there is now a patchwork of technical support services that cries out for management attention. There is a need for both near-term and longer-term action.

Near-term actions are needed to ensure that RPMs are well aware of the range of technical support services available to them and know how to obtain these services. Many Regional Office managers and staff suggested that a directory of technical support services be promptly developed and regularly updated; if one already exists, most of them are unaware of it. In the case of automated databases, needed near-term actions include training to familiarize RPMs with the content of the databases and the procedures for obtaining access to them; some RPMs may need easier access to computers and basic training in the use of computers to communicate with automated databases. Although some of the computer-based technical support services for RPMs are available only through EPA's Electronic Mail System, relatively few RPMs know how to use the system or have easy access to it.

In the longer term (but within the next 12 months), it is essential that the Agency take steps to improve and coordinate technical support services. While it may be neither necessary nor feasible to have all technical support services housed in a single organizational unit, the task group believes that they all should operate under a single "umbrella"--one group or one official responsible for ensuring coordination in assessing and meeting technical support needs and establishing and evaluating technical support services. The task group was encouraged to learn that OERR's Deputy Director has been given special responsibility for overseeing OERR's technical support activities. There is no question that the Deputy Director can make sure that appropriate action is taken, but he clearly cannot decide what should be done and monitor and evaluate the results without staff support.

To lay the groundwork for development and implementation of a master plan in this area, a number of questions need to be answered: Which technical support needs are most pressing? To what extent are the existing and planned technical support services meeting or designed to meet the most pressing needs? Are they being effectively used? A definitive assessment of technical support needs and resources could provide answers to these and other critical questions.

RECOMMENDATIONS:

To enable RPMs to identify and use EPA's technical support services, the Office of Emergency and Remedial Response, in conjunction with the Office of Waste Programs Enforcement and the Office of Research and Development, should quickly take the following actions:

1. **Prepare and publish a directory of technical support services, update it frequently, and ensure that every Remedial Project Manager promptly receives the initial and all updated editions.**

2. **Ensure that all RPMs know how to use automated databases containing information relevant to their work and that they have access to computers configured for data communication.**

Within the next several months, the same three Headquarters offices should lay the groundwork for effective long-term management of technical support services. Toward this end, they should take the following actions:

1. **Designate an existing group, or establish a new one, to be responsible for EPA-wide management of technical support services to RPMs.**

2. **Direct this group to develop and implement a master plan for assessing and meeting RPMs' needs for technical support.**

DEFINING STATES' ROLE AND IMPROVING THEIR CAPABILITY

FINDINGS: Although some States have effective site cleanup programs, many currently do not. As a result, there often are delays and quality problems at sites where States have the lead role in managing Fund-financed RI/FSs or in overseeing RI/FSs being conducted by PRPs. The lack of a clear definition of States' roles in the Superfund program limits efforts to improve current State capabilities and will prevent EPA and States from combining their resources most effectively in the future.

DISCUSSION: If EPA determines that a State is capable of undertaking remedial activities at a site, the Regional Office can allow the State to take the lead for the Remedial Investigation/Feasibility Study (RI/FS) and Remedial Design (RD). States have taken the lead at some sites (to date, primarily on RI/FSs) in most Regions. On Fund-lead projects, States conduct RI/FSs with EPA funding, using their own consultants, contractors, and staff. States can also take the lead at enforcement sites (i.e., those at which PRPs are conducting remedial activities) for which they receive EPA grants to cover their oversight costs. EPA Regional Office staff are responsible for overseeing State activities at these sites. In order to take the lead at a Fund site, a State must enter into a cooperative agreement with EPA, which defines each entity's responsibilities during the remedial period.

With some exceptions, State-lead RI/FSs have not been fully successful. The primary problem is that States have often been slow in conducting these activities. There are three reasons for this lack of timeliness. First, State Superfund programs tend to be underfunded and, because of low salaries and high turnover, lack experienced staff.

Second, some States' contracting procedures and other administrative processes lead to delays. In at least one State, for example, it can take up to two years to select a contractor through the competitive bidding process. (The task group acknowledges that EPA faces similar personnel and administrative problems in the Superfund program.) Third, some States that take on Federal sites place a higher priority on addressing their own, non-NPL sites and let deadlines slip for their activities at Federal sites. Even though the cooperative agreements specify deadlines, EPA has no means to enforce them.

In at least three Regions, EPA has had to take back sites from States because of lack of progress. One Regional Office, for example, took back a site from a State that had spent four years on the RI/FS and was still far from completing it. There are, of course, exceptions to this generalization about State programs. Several States have developed effective Superfund programs. These States have highly competent staffs and well funded programs. They usually move quickly and aggressively in addressing both their own sites and Federal sites for which they have the lead.

Current problems with State-lead sites are of concern for two reasons. The most immediate is that EPA and States should be striving to achieve effective and efficient action at all Superfund sites, regardless of the lead agency. A broader concern is that with over eleven hundred sites on the NPL and thousands of others identified as possibly needing action, the magnitude of the hazardous site cleanup problem is larger than EPA alone can manage and will require that States and EPA marshal their combined resources.

In the task group's view, the lack of an agreed-upon vision for future State/EPA roles in hazardous site cleanups (both NPL and non-NPL) is a major obstacle both to improving current work on State-lead sites and to making the most effective use of State and EPA resources in the long term. Without that shared vision and a strategy for implementing it, EPA and State managers and staff are often operating on inconsistent assumptions about their roles in each other's programs. For example, some Regional Office managers have concluded that States should never play a stronger role in managing NPL sites; others view the States as "the future of the program" and State program development as an important, if small, part of their current responsibilities.

State managers who advocate a more extensive State role at both NPL and non-NPL hazardous waste sites have suggested that EPA take several measures to increase the number, efficiency, and quality of State cleanup activities:

- Allow States with strong Superfund programs to assume more project leads at both Fund and enforcement sites.

- Eliminate any existing disincentives to State assumption of project leads.

- Over time, scale back EPA oversight of State-lead sites; shift resources saved through reduced oversight to EPA-lead sites.

- Improve weak State Superfund programs by providing training and tools to strengthen their technical, legal, and administrative capabilities.

- Examine proposed mechanisms to encourage increased State activity at non-NPL sites, including deferral of sites to State agencies.

RECOMMENDATIONS: EPA should begin now to resolve the fundamental policy question of what States' long-term role in the Superfund program will be. Based on that policy decision, EPA and States should jointly develop short- and long-term strategies to enhance State program capability, improve State performance at State-lead Superfund sites, and foster State remedial activity at sites not on EPA's National Priorities List.

MAKING TECHNICAL AND POLICY GUIDANCE MORE USABLE

FINDINGS: Existing technical and policy guidance for Regional Offices is generally too long and detailed for its intended purpose and is often not easily accessible. Questions also exist as to whether guidance is prescriptive or advisory.

DISCUSSION: In a program as complex as Superfund, it is clearly necessary that EPA Headquarters provide a considerable amount of technical and policy guidance to the Regional Offices. Formulating and distributing such guidance is one of OERR's and OWPE's major responsibilities. In addition, EPA's Office of General Counsel and Office of Enforcement and Compliance Monitoring contribute legal and enforcement guidance. There currently are some two hundred technical and procedural guidance documents and policy directives, and more are being developed. Although all this guidance is well intended, there is a consensus among Regional Office managers and staff that much of the existing Superfund guidance is too long and detailed to serve its intended purpose.

Neither RPMs nor managers are able to read and retain all the guidance coming from Headquarters, let alone incorporate it into their day-to-day thinking and planning. This is especially true of guidance on policy and procedures. While the task group could not conduct a formal analysis of the existing Superfund guidance, task group members did read many of the existing guidance documents (a term that will be used in this section to encompass technical and procedural guidance documents and policy directives). Their assessments echoed those offered by many Superfund managers and staff in both Headquarters and Regional Offices--that many guidance documents are much longer than necessary, that they tend to be repetitive, that they frequently provide unnecessary advice on straightforward issues, and that they often dwell on exceptions rather than stating a "rule" to be followed in most cases.

OERR has begun responding to the Regional Offices' concern about the length of guidance documents by developing and issuing "short sheets." Those developed so far are two to six pages long--including tables and charts designed to present information clearly--and summarize material that occupies two or more chapters in conventional guidance documents. To the extent that they have seen or know about short sheets, Regional Office managers and staff welcome them. The task group agrees that short sheets are a reasonable approach, not only as a way to make existing guidance more accessible but also as the basic format for all future guidance. Where Headquarters believes that more detailed material should be available to Regional Office managers and staff, such material could be presented as reference documents.

RPMs also have problems obtaining access to guidance. They tend to consult guidance documents for answers to specific questions when they know there is guidance that deals with those questions; often, however, RPMs are not even sure whether there is relevant guidance or whether the material they can find is the most recent pronouncement on the subject in question. In addition, RPMs report that they sometimes cannot locate copies of guidance even when they know it exists, that their Regional Offices generally receive few copies of guidance documents and directives (which means that RPMs cannot take such materials with them on trips), and that they sometimes have difficulty obtaining copies of guidance documents from Headquarters. Regional Office managers and staff also report that PRPs sometimes receive new guidance documents before Regional Offices do.

There is no indication that the deficiencies of existing guidance prevent Regional Office managers and staff from getting their work done. Furthermore, it is obvious that guidance on implementing a statute as complex as SARA cannot always be presented in simple declarative sentences. In short, the task group recognizes that there are some significant limitations on what can and should be done about the problems identified here. The task group has concluded, however, that guidance is of limited value to people who find it difficult and frustrating to use.

The task group identified two other problems relating to the formulation and use of technical and policy guidance: First--and somewhat ironically--there are technical and policy issues on which Regional Offices want guidance but have been unable to obtain it. One example brought to the task group's attention is the question of whether and how land use considerations should be taken into account in remedy selection. Another is the Regional Offices' interest in having Headquarters provide copies of RODs or sections of

RODs that are considered exemplary. The second problem identified is a lack of definition as to the force and effect of Superfund guidance--that is, whether it is prescriptive or advisory. This uncertainty sometimes leads EPA contractors to argue that they cannot do less than is called for in Superfund guidance (because they are concerned about liability) and PRPs to resist Regional Office requests to do anything beyond what is explicitly called for in the guidance.

RECOMMENDATIONS:

To facilitate Regional Offices' use of and access to program guidance, the Office of Emergency and Remedial Response and the Office of Waste Programs Enforcement, in conjunction with the Office of General Counsel and the Office of Enforcement and Compliance Monitoring, should take the following steps:

1. **Continue to develop and issue "short sheets" that summarize existing guidance, ask the Regional Offices to suggest candidates for additional "short sheets," and issue new guidance first as "short sheets" and later, as necessary, as longer reference documents.**

2. **Designate in each office a single official to take responsibility for overseeing the planning and development of all technical and policy guidance and ensuring that guidance issued by the various offices does not conflict.**

3. **Establish procedures to ensure that guidance is prepared and updated in a timely fashion and systematically distributed to all Superfund managers and staff in the Regional Offices.**

4. **Explain how Regional Offices and other interested parties can distinguish between prescriptive and advisory elements of Superfund guidance.**

IV. BRINGING INNOVATIVE TECHNOLOGIES TO BEAR ON POLLUTION AT SUPERFUND SITES TO STRENGTHEN REMEDY SELECTION

CHAPTER IV

BRINGING INNOVATIVE TECHNOLOGIES TO BEAR ON POLLUTION AT SUPERFUND SITES TO STRENGTHEN REMEDY SELECTION

INTRODUCTION: The ultimate success of the Superfund program depends on its ability to select remedies that protect human health and the environment, that maintain protection over time, and that minimize untreated waste. Treatment that reduces the toxicity, mobility, or volume of the waste plays a vital role in achieving this goal. SARA requires that EPA give a strong preference to such remedies in cleaning up Superfund sites. Use of these treatment technologies, which include physical, chemical, thermal and biological treatment, is the focus of this chapter.

The Superfund program must deal with several Congressional directives in addressing use of treatment technologies. In addition to the requirement to give preference to treatment remedies, are the requirements to employ "cost-effective" solutions, and the requirements to ensure that remedies protect human health and the environment. These objectives are difficult to balance because of the relatively early state of development of treatment technologies and uncertainties about their performance and costs. It is clearly more difficult to choose treatment as a remedy if there are uncertainties about the effectiveness (in terms of reducing the toxicity of a waste), reliability, and cost-effectiveness. Even the enforcement provisions of SARA complicate the decision to use treatment technologies. EPA's objective is for the Responsible Parties at the site to implement (fund) the remedy EPA selects, but these same parties are often reluctant to agree to a remedy that carries with it significant uncertainty of success and potentially high costs. Other SARA requirements, such as the 10 percent cost match by States present a similar dilemma, because States have similar concerns about viability and cost.

An aggressive, broad based technology development initiative is needed to address these issues so the SARA requirements can be met to the fullest extent possible. This initiative must focus on reducing technical uncertainties, expanding the technology base, and overcoming policy and regulatory barriers to use of treatment technologies. Specific initiatives can be grouped into three program areas:

1. Reduce any non-technical barriers, such as regulatory and policy constraints that inhibit use of treatment technologies.

2. Provide extensive technical assistance, expert advice, and information transfer to make the best use of the information that is available now and is being developed.

3. Aggressively support the research, development, demonstration and evaluation of new treatment technologies for Superfund sites

The findings and recommendations in this chapter fit into the three categories above. Each addresses a separate issue or topic that is a statement of an area where action is needed. Listed below is a summary of topics organized under the three general categories above:

- Reduce non-technical barriers to use of treatment technologies.

  Topics:

  1. Establish clear guidance for use of treatment technologies
  2. Management oversight of expanded use of treatment in Superfund remedies
  3. Remove regulatory and policy barriers to use of treatment technologies.
  4. Remove barriers to procurement of treatment technologies

- Provide extensive technical assistance, expert advice, and information transfer.

  Topics:

  1. Technical assistance to the regions for evaluation of treatment technologies
  2. Treatability tests of treatment technologies
  3. Technical information dissemination on treatment technologies

- Aggressively support research, development, demonstration and evaluation of new technologies.

Topics:

1. Development, demonstration, and evaluation of new and innovative treatment technologies
2. Expand research to develop new treatment technologies
3. Reduce institutional barriers to commercialization of innovative treatment technologies

ESTABLISH CLEAR GUIDANCE FOR USE OF TREATMENT TECHNOLOGIES

FINDINGS: Insufficient implementing guidance exists to support the regional project managers in applying current Agency policies on use of treatment technologies, particularly with regard to the criteria for technology selection.

DISCUSSION: Since the passage of SARA, EPA has been selecting treatment more frequently as a clean-up remedy. During FY88, 72 percent of the final remedies to control sources (e.g. lagoons, landfills, and soils) used treatment in some aspect of the clean-up. The EPA can improve on this record by using treatment more often and more effectively.

The proposed revisions to the National Contingency Plan (NCP) and Agency guidance emphasize the importance of treatment to achieve reliable, long-term remedies. "Advancing the Use of Treatment Technologies for Superfund Remedies", February 1989, encourages treatment and innovative technologies by laying out the expectations for the use of treatment, promoting use of technologies other than incineration and solidification, stressing innovative technologies, and underscoring the value of treatability studies in the remedial program. But other existing guidance does not emphasize treatment to the extent needed. Examples include the guidance for Remedial Investigations/Feasibility Studies (RI/FS) and guidance for Records of Decision (RODs).

These guidances need to express not only a clear policy preference for treatment, but also need to provide specific implementation guidance that on a day-to-day basis helps regions carry out the policy.

The RPMs Dilemma

For this site I have three remedies that should work--that is, should protect human health. One is a conventional containment approach and the other two use treatment. One of the treatment methods involves chemical fixation and encapsulation; the other would yield nearly complete destruction of the toxics at the site. Although that remedy provides the most complete treatment and is the most reliable long term remedy, it is significantly more costly - nearly two times the cost of the other treatment remedy, and six times the cost of the containment remedy. SARA emphasizes use of treatment technologies that reduce the toxicity and mobility of the waste, and I know the lower cost remedy may not be as reliable in the long term, but I don't know how much more to spend on treatment. How do I deal with this in applying the nine remedy selection criteria and choosing a remedy?

Regional project managers must apply the nine remedy selection criteria described in the proposed NCP. Five of these criteria must be "balanced" in selecting a remedy. These are long-term effectiveness, mobility or toxicity reduction through treatment, short-term effectiveness, implementability and cost. Further guidance would help the project managers balance these criteria, especially long term effectiveness and treatment versus cost in making the final remedy selection.

Because of their heretofore limited track record, innovative technologies currently involve greater uncertainty than more conventional remedies in performance and cost. Project managers need to better understand the latitude they have to select such technologies in the face of these uncertainties. One idea that has been discussed by the regional offices is "contingent remedies", where an innovative technology is selected, but backed-up by another remedy that would be implemented quickly if the primary remedy does not meet requirements.

We believe that the realism that innovative technologies involve uncertainties and higher costs has to be considered in developing the guidance. But as technology development evolves further this will change. Thus, Superfund remedy selection guidance should appropriately reflect the statutory preference for treatment and should encourage the use of innovative technologies, which should increase as more experience with innovative technologies is gained.

RECOMMENDATIONS: Superfund policies and guidance should be reviewed and revised to ensure that use of treatment technologies is given stronger emphasis in accordance with SARA's directions. Guidance should emphasize the use of treatment technologies in early actions to mitigate significant threats at sites, as well as in later actions to fully clean up the sites.

MANAGEMENT OVERSIGHT OF ACTIONS TO EXPAND USE OF TREATMENT IN SUPERFUND REMEDIES

FINDINGS: The wide range of activities at EPA related to technology development require coordination and direction. In addition, regional implementation is sometimes inconsistent among regions, and with headquarters guidance.

DISCUSSION: Cooperation from several offices is necessary to achieve greater use of technologies. The Office of Emergency and Remedial Response (OERR) within (OSWER) has the overall responsibility for managing the Superfund program. This Office is responsible for the National Contingency Plan, providing policy and guidance, measuring progress against program goals, and other management tasks.

The Office of Program Management and Technology (OPMT) was established in OSWER to help integrate and coordinate activities between OERR, the Office of Solid Waste, and the Office of Research and Development (ORD). An ongoing activity of the technology staff in OPMT is joint responsibility with ORD for implementation of the Superfund Innovative Technology Evaluation (SITE) program. The staff also provides technology transfer of information on innovative technologies and limited technical assistance to the Regions. Another joint effort with ORD is to help facilitate rapid, direct technical contact between remedial project managers in the field and experts in the Regions and ORD laboratories. The staff is also responsible for representing OSWER on the Research Committee to help guide ORD activities and budget.

The activities of the Office of Program Management and Technology have provided needed support, coordination and emphasis to development and use of treatment technologies. The functions of this Office appear to be needed and perhaps should be strengthened to ensure appropriate leadership and coordination on removing barriers to use of innovative technologies. A clear senior management focus is needed to ensure success either as part of this group of another appropriate organizational arrangement.

Another form of management oversight and coordination relates to the activities of the regional offices. The Agency has been criticized for inconsistency among the regional offices in selecting clean-up remedies. Often this criticism has incorrectly assumed that the same remedy or clean-up level invariably should be chosen from site A to site B. This fails to recognize the complexity of each Superfund site situation. The consistency should come in the process that is used to select the remedy, the application of the nine criteria that have been established for remedy selection, and the statutory mandate for permanence to the maximum extent practicable and the use of treatment technologies.

Consistent application of these criteria is particularly important regarding selection of treatment technologies. Because the selection process involves a balancing of the nine criteria, the potential exists for inconsistency in the cost and other trade-offs relating to selecting treatment versus other remedies. To ensure consistency, and to promote use of treatment technologies, an appropriate level of headquarters oversight and review of regional decisions is appropriate.

RECOMMENDATIONS: A senior program manager in the Office of Solid Waste and Emergency Response should serve as "Technologies Czar" and should be responsible for working with other offices to develop and implement actions necessary to remove barriers to use of treatment technologies.

The Office of Emergency and Remedial Response should work with the Regions to provide national consistency on procedures for selection of treatment technologies. The expanded role for regional coordinators outlined in the previous chapter on improving remedial work should include this task as a major activity.

REMOVE REGULATORY AND POLICY BARRIERS TO USE OF TREATMENT TECHNOLOGIES

FINDINGS: Regulations developed under the Resource Conservation and Recovery Act (RCRA) that are considered "applicable or relevant and appropriate" to Superfund may have unanticipated cost or technical impacts. For example, new land ban regulations required under RCRA that are based on "best available technology" may limit the potential treatment technologies that can be used in Superfund clean-ups. Technologies such as solidification, stabilization, and biological treatment may be precluded because they may not meet the highest level of performance required by the land ban regulations. In addition, there is a tension between the cost recovery goals of SARA and the selection of innovative treatment technologies for site clean-up.

DISCUSSION: Under the RCRA land disposal restrictions, hazardous waste is banned from land disposal unless the waste meets specified treatment standards promulgated by EPA. These standards, represent the Best Demonstrated Available Technology (BDAT) for the waste. They are expressed as a maximum allowable concentration in the waste, as a required treatment technology, or in a few instances, as an absolute ban. Under CERCLA, Superfund remedial actions that generally address contaminated soil and debris must comply with RCRA standards when they are applicable or relevant and appropriate requirements (ARARs). Given the close similarity between the wastes and the activities covered under CERCLA and RCRA, the land disposal restrictions will often be an ARAR for Superfund.

Innovative technologies, such as biological treatment, soil washing, and solidification will in many cases not be able to achieve the same levels achievable by BDAT technologies that are the basis for the land disposal restriction rules, and would therefore be precluded from use at Superfund sites. This is true especially because the BDAT treatment standard for many wastes, particularly organic waste, is based on incineration or thermal treatment, which can achieve nearly total destruction, albeit generally at significant cost. Although a treatment technology, such as chemical or biological treatment, may not be able to attain the "best" level of treatment defined in the land disposal restriction regulation, it may well be able to achieve a level that is protective for the site.

For some waste types, solidification technologies that do not actually destroy the waste may not be able to meet land disposal restriction regardless of their effectiveness in immobilizing the waste, since attainment of the standard for many wastes is based on "total waste analysis," rather than an extraction and leachate test of the treated waste. Only actual reduction in the concentration of the waste - as opposed to immobilizing it - can achieve the standard. (Another RCRA rule that may restrict use of solidification at Superfund sites is the Toxicity Characteristic Leaching Procedure--the extraction test used to determine if a waste is hazardous. This test requires grinding of solids, so that a significant part of the inherent benefits of solidifying a waste are defeated in the test.) Even though solidification may not be equivalent to BDAT, for soil and debris with lower concentrations of organics, or organics mixed with metals, it can be a protective and cost-effective remedy.

Even if an innovative technology is capable of attaining a level comparable to the BDAT standard, these technologies are by definition relatively unproven and untried. There may not be sufficient information at the time the remedy is selected to make the determination with confidence that a new but promising technology can attain the land disposal restriction levels. Decision-makers may be reluctant to select an unproven technology for fear that, after investing time and dollars, the technology cannot comply with those levels.

Making RCRA Regulations Fit Superfund

The rules written under RCRA, such as land ban, are not developed with the characteristics and peculiarities of Superfund wastes in mind. In some cases these rules are difficult to apply to Superfund wastes, or they create unanticipated - perhaps counterproductive - effects. This is in part because the contaminated soils and debris typically found at Superfund sites are different from the process waste streams that RCRA was designed to address. Yet, if the RCRA rules are applicable (e.g. meet the regulatory definition of applicability) or relevant and appropriate (i.e. not legally applicable but address a similar situation and are well suited to the site), SARA says that they must be applied to Superfund clean-up.

The land ban rules are a case in point. They would be "applicable" to any placement of Superfund waste that meets the definition of a hazardous waste in Part 261 of the RCRA regulations. For other "similar" wastes, they may be "relevant and appropriate". If land ban applies, the treatment choices for the site are limited by the RCRA rule to the "best demonstrated available technology", even though for contaminated soils other technologies may provide sufficient, and more cost-effective treatment.

An important policy issue that can act as a barrier to use of innovative technologies concerns the cost recovery provisions of SARA. EPA's goal is to have responsible parties fund and conduct Superfund clean-ups. A related goal is to recover costs from responsible parties to the maximum extent possible when site clean-up is performed by the Agency.

Responsible parties will frequently implement Superfund remedies, and the willingness of responsible parties to consider innovative technologies may affect their use. In some cases, the responsible parties conducting RI/FS may suggest innovative technologies themselves. The innovative technology may be less expensive than more conventional technologies, it may provide the responsible party with an opportunity to test an innovative technology with potential commercial application, or the responsible party may believe the innovative technology is less likely to fail. In such situations, they bear the risk of paying for any subsequent remedial action if the innovative technology does not work.

In other situations, responsible parties may object to innovative technologies. If EPA implements a technology that fails or that costs more than projected, then responsible parties can be expected to argue that EPA is not entitled to full cost recovery. This possibility tends to create pressures within the Agency that discourage the selection of innovative technologies.

Although this potential for challenge exists at any site with potentially responsible parties, remedies selected by EPA will be upheld in court unless arbitrary and capricious, or otherwise not in accordance with law. The Superfund law encourages the selection of innovative technologies, and EPA should continue to select them where appropriate, the threat of challenge from responsible parties notwithstanding.

RECOMMENDATIONS: The impact of RCRA land ban or other rules on use of alternative technologies should be carefully evaluated to identify technologies that may be precluded by the rules. The Office of Emergency and Remedial Response and Office of Solid Waste must jointly explore ways to apply these rules that preserve their intent and spirit without restricting use of viable treatment approaches for Superfund sites.

EPA should develop guidance that balances the goal of advancing innovative technologies against the need to minimize challenges during cost recovery actions.

REMOVE BARRIERS TO PROCUREMENT OF TREATMENT TECHNOLOGIES

FINDINGS: Current implementation of the Federal Acquisition Regulations (FAR) has revealed unanticipated obstacles to the procurement of innovative and proprietary treatment technologies.

DISCUSSION: Provisions in the Federal Acquisition Regulations (FAR) are reducing the flexibility of the Superfund program in procuring innovative technologies. One concern relates to treatability tests. FAR allows contractors to either prepare plans and specifications or implement construction; but prohibits contractors from doing both activities for the same project. Treatability tests are an important part of the remedial planning process to evaluate, select and design remedial actions. Often there is a narrow group of firms that can conduct treatability tests for particular technologies. Also, many companies are not interested in conducting treatability tests if their participation precludes them from bidding on the construction contract. A contractor performing a treatability test during the remedial investigation/feasibility study (before remedy selection and design) probably is not precluded from bidding on the construction contract. However, treatability work is often needed during design to establish the operating parameters of the technology. Innovative technologies are especially impacted because of the greater need to assess feasibility and reliability.

Another constraint is an Agency policy that restricts a contractor from working for the EPA and a responsible party on the same site. The purpose of this policy to ensure that a contractor does not end up working for two parties with different interests. Under this policy responsible parties generally cannot use the same contractors or expertise that was used by the EPA. At many sites there has been a cooperative effort between the EPA and the responsible parties with EPA managing (i.e. funding) part of the work and responsible parties agreeing to take over other parts of the site work. Specifically, if a firm is retained by EPA, or an EPA contractor, to perform a treatability study during the RI/FS or design phase, that firm is precluded for three years from working for the responsible party during any phase of site activity including construction. Although there is a waiver provision in the policy, the policy itself has proved to be an impediment for conducting treatability tests, and therefore to selecting treatment technologies to clean up the site.

There are also contracting constraints related to the procurement of proprietary technologies. Federal Acquisition Regulations allow for sole source procurement, but this is often a slow and uncertain process. Other approaches need to be explored to make these proprietary technologies more widely available. The Agency may want to enter into discussions with companies that own such technologies, regarding their willingness to sell patent rights or offer licensing of their technology to other contractors. While it may at first appear mundane, this proprietary principle stands as one of the major initial impediments to the use of a wide range of emerging technologies. Procedures must be developed to allow greater freedom in performing treatability studies and in the use of sole-source procurements for proprietary technologies.

RECOMMENDATIONS: **EPA should evaluate the provisions of the FAR to determine where latitude exists to eliminate procurement constraints to utilizing treatment technologies. Procedures should be developed to allow greater flexibility in performing treatability studies and in how "proprietary" technologies are defined for purposes of these regulations.**

TECHNICAL ASSISTANCE TO THE REGIONS FOR EVALUATION OF TREATMENT TECHNOLOGIES

FINDINGS: Many treatment technologies for Superfund sites are new and technically complex. In many cases, data on their performance are limited. EPA project managers are not fully knowledgeable about the availability, performance and costs of these technologies. As a result, they are often unable to confidently determine which, if any, of these technologies can best clean-up a given site.

DISCUSSION: Superfund projects are managed in the Regions by staff level project managers supported by other regional staff and by contractors. The project managers must oversee one or more contractors, manage project schedule and budget, communicate with the public, and make decisions and recommendations on a number of legal, policy and technical issues. The management demands of their jobs leave little time for them to become expert in any given area, particularly one as complex and rapidly evolving as treatment technology. They must depend on other experts to support them in technical, legal and other areas.

In the past, they have relied heavily on their contractors for much of the technical expertise needed in the project, but this has reduced their ability to properly manage and direct the contractor. Furthermore, many contractors are not expert in new treatment technologies because information is rapidly evolving and changing. Thus, neither the regional project managers or their contractors are in the best position to stay abreast of developments in new treatment technologies.

As a consequence, some new technologies that might be applicable for clean-up of a site are never considered. Studies of those that are considered sometimes take longer and cost more than they should, and in the end, the technology selected may not include treatment, or it may be used less extensively than the Agency desires.

A technical assistance program can greatly assist regional project managers if it is comprised of knowledgeable individuals, is well coordinated, and is focused on the key decision points in the site evaluation process.

A Typical Situation

The contractor and regional project manager are meeting to discuss the contractor's work plan for the RI/FS. In the first phase, the remedial investigation (RI) the contractor will collect data to characterize the site. This must also include data that will enable them to evaluate alternative remedies in the second phase, the feasibility study (FS). A key question that must be answered now, or later in the RI, is what are the potentially viable technologies that could be applied to this site. The answer will guide the field sampling and data gathering efforts. Unfortunately, in the face of uncertainty, a long list of potentials is often suggested. This adds up to time and costs in the study. Later, at the end of the RI, a further narrowing of remedy alternatives must be made. How many technologies should we evaluate during the feasibility study. Again, the list may be too long, or new technologies with real potential may be left out. At the end of the feasibility study, the even tougher job of weighing the information and recommending a remedy must be done. ("Vacuum extraction of organics looks like a good option, but has it ever been done with these concentrations?") At each of these points the technologies at issue include several innovative treatment technologies with very limited track records. What the RPM needs and wants is a source of expertise and advise -- someone whose job is knowing about innovative technologies, someone with "grey hair" and "dirty hands" from answering these questions every day, someone that makes it their business to keep abreast of the rapidly expanding information on these technologies. They need a team of technology experts.

The primary source of expertise in the Agency is the Office of Research and Development (ORD). Within ORD, the Office of Environmental Engineering and Technology Demonstration (OEETD) has been conducting research, development and demonstration of waste treatment technologies for a number of years. This office currently conducts the Superfund Innovative Technology Evaluation (SITE) program, which will be discussed later in this report. Building on this core of expertise, ORD has the capability to field a highly effective team of experts.

The strong feeling among Superfund staff is that this should be a dedicated team whose sole job is assisting the Regions. Otherwise, competing job demands would interfere with effective delivery of services. A model for this approach is EPA's Environmental Response Team, which for several years has provided expert advice on response to chemical emergencies and other time critical response actions.

For a technical assistance program to be effective, it must be focused on the critical decision points in the site evaluation process and applied consistently and systematically. It must become a routine part of the evaluation process. It must be applied first in the earliest part of the evaluation to identify the potential range of technologies to be evaluated; it must assist at intermediate points to evaluate alternatives and select an appropriate technology; and it must assist in the final engineering design of the selected technology.

RECOMMENDATIONS: **EPA should establish nationwide technology support teams within the Office of Research and Development, to provide on-site, project-by-project technical advice to regional project managers on treatment technologies. These support teams should work in conjunction with regional coordinators in the Superfund program office to identify specific technologies or combinations of technologies to respond to generic site situations.**

TREATABILITY TESTS OF ALTERNATIVE REMEDIAL TECHNOLOGIES

FINDINGS: To evaluate the application of treatment technologies to particular sites, it is essential to conduct laboratory or pilot-scale treatment tests on actual wastes from the site, including, if needed and feasible, tests of actual operating units prior to remedy selection. These "treatability tests" are not currently being performed at many sites to the necessary extent, or their quality is not adequate to support reliable decisions.

General treatability testing can be performed in the laboratory to determine the physical/chemical properties of wastes that make them suitable for certain technologies, and on a site-by-site basis as part of the remedy selection process to determine the viability of a given technology for that site. These approaches are complementary in that the general testing can be used as a screening tool whereas site specific testing is required to know how a given technology will perform at a particular site.

DISCUSSION: Treatability tests are laboratory or pilot-scale treatment tests on actual wastes from a site, and are essential to evaluating alternative treatment approaches. Without these tests it is difficult to determine how effectively a given technology will treat wastes at the site. These tests are needed at virtually every site because the physical and chemical nature of the waste, soil, and water mixtures differ greatly from site to site. Treatability tests have to be conducted as a part of the Remedial Investigation/Feasibility Study (RI/FS) - the study leading to the selection of a clean-up remedy at a Superfund site.

The first part of the study, the Remedial Investigation, includes characterization of the contamination at the site and a preliminary identification of technologies that may be applicable to the site and should be further evaluated. The Feasibility Study includes assessment of exposure and risk, determination of a clean-up level, and evaluation of alternative approaches to clean-up the site, including various treatment technologies. At the end of the Feasibility Study the Agency evaluates the data and selects a remedy to be implemented, documenting their decision in a Record of Decision (ROD). This is followed by the preparation of an engineering design of the selected remedy to set the stage for competitive bidding.

Treatability tests are needed at two different stages of the above process. They are needed during the Feasibility Study to help determine the potential effectiveness of different treatment approaches that are being evaluated. Since the wastes differ widely from site to site, these tests are essential to determining the feasible, and best, treatment approaches. Secondly, they are needed during the design phase. At this stage more detailed treatability tests are needed to ensure the design parameters being developed are correctly specified and that the effectiveness of a given technology within the remedial situation can be counted upon by site managers.

Currently, both types of treatability tests are being done sporadically and often inconsistently. Several factors contribute to the deficiencies in treatability tests. One is simply that clear guidance has not been provided from Headquarters. Another is that standard testing protocols are not available to ensure that the tests are done correctly and consistently. Finally, the Regions have difficulty finding laboratories that are capable of performing these tests.

A third type of treatability test that can be very useful is a study to characterize generally the waste types (chemical and physical characteristics) that can be processed by a given technology. These tests are not site specific, but instead can involve tests on wastes from a variety of sites to determine the limits of a particular technology, or determine types of technologies that can treat a particular waste. This information can significantly aid the screening of a host of technologies during the Remedial Investigation and Feasibility Study.

As a result of these problems, the analysis of treatment alternatives is not as complete or effective as it should be. This has resulted in uncertainties about performance and a tendency to avoid the risk of selecting treatment as a clean-up remedy.

RECOMMENDATIONS: EPA should establish a treatability assistance program within the Office of Research and Development to perform treatability tests, develop standard testing protocols, and maintain a data base of test results. This program should work closely with the Technology Czar and Regional Coordinators in the Office of Solid Waste and Emergency Response, and with the regional offices.

The Office of Emergency and Remedial Response (OERR) should provide policy guidance to the Regions to ensure that treatability tests are emphasized, and should also provide guidance on how to use treatability tests in selection of a clean-up technology.

TECHNICAL INFORMATION DISSEMINATION ON TREATMENT TECHNOLOGIES

FINDINGS: Information on performance and costs of alternative treatment technologies is essential to EPA project managers and their technical advisors and contractors. Although much data is being generated in the public and private sector, it is not being collected and organized and is not widely available.

DISCUSSION: A broad spectrum of information on treatment technologies is being generated constantly. Demonstrations under the Superfund Innovative Technology Evaluation (SITE) program and treatability studies are two of many potential sources of data. EPA, States, and other Federal agencies all generate significant amounts of information on treatment technologies. This information is not being collected and disseminated in any organized way. Thus, it is difficult for a regional project manager (or contractor) in one region to know what has been done in another region, or by a State, responsible party, or other Federal agency in testing, demonstrating, or applying new technologies. To take maximum advantage of work that has already been done, the results of that work must be assembled and distributed through an information clearinghouse. Simply knowing whether anyone has tried using technology A to treat waste B in matrix C, and having the results at hand and the name of a contact person can save needless wasted effort and expense and avoid repeating past mistakes.

Another important benefit of data sharing is consistency. Only if all participants are "playing from the same deck" of information can we expect decisions on use of treatment technologies to be consistent.

Every regional project manager speaks of the need to have technical information available. EPA's Office of Research and Development has recognized the need to centralize data from their own studies and demonstrations, as well as from other sources, and has begun to set up a clearinghouse for technical information on treatment technologies. This clearinghouse, called the Alternative Treatment Technology Information Center (ATTIC), is still under development, but is scheduled to go on-line in the near future. It will provide access to a wide range of treatment technology data from EPA and other sources. This clearinghouse is a strong step in the right direction and EPA should give priority to supporting and fully developing its capabilities.

In addition to having basic data on new technologies readily available, further benefits can come from periodic interpretative summaries of the information. Such summaries could "interpret" for project managers the overall status of development of certain technologies, and the types of wastes and sites where they appear to be applicable. Regularly updated technology handbooks would be the product of this effort.

Finally, information can be effectively transferred through more traditional means, such as report distribution, conferences, seminars, and technical forums. These efforts constitute a baseline that to date has been the primary means of activity information transfers. Although these are essential activities, there is frequently criticism of the timing and technical complexity of reports. Users want faster turnaround and management summaries. Similarly, users generally prefer to attend technical forums to share information with their peers as opposed to long, structured conferences.

RECOMMENDATIONS: The Agency should establish an information clearinghouse, within the Office of Research and Development (ORD) containing data, reports and references from EPA, State and other evaluations of technology performance. The clearinghouse should include a computerized data base that allows access through telephone inquiry, on-line computer access, and printed material.

ORD should continue, and expand as necessary, its current technology-transfer activities of dissemination of technical reports, technology forums, seminars and conferences and should ensure that this transfer is effectively directed at Regional Project Managers and their contractors.

DEVELOPMENT, DEMONSTRATION AND EVALUATION OF NEW AND INNOVATIVE TREATMENT TECHNOLOGIES

FINDINGS: There are not now enough proven, cost effective treatment technologies to address the widely varying range of wastes and site conditions that Superfund encounters. As a result, regional project managers cannot choose these remedies with enough confidence that they will perform successfully. Technology demonstrations under the Superfund Innovative Technology Evaluation Program (SITE) are addressing this need, but additional technology development support is needed to further expand the range of available technologies. In addition, information from these demonstrations must be produced in a more timely way.

Technology Jargon

The words used to describe the various stages of technology development can be confusing. EPA uses the following terms to define these stages. "Available" technologies are fully proven and in routine commercial use. "Innovative" technologies are fully developed technologies for which cost or performance information is incomplete, thus hindering routine use at hazardous waste sites. Innovative technologies require field testing before they are considered proven and available for routine use. "Emerging" technologies are those that have involved laboratory testing and/or some pilot scale testing, but this testing is not yet sufficient to document the technical viability of the process. Obviously, the lines between the various stages of development are not always sharp, but these definitions serve as a way of communicating about the continuum of technology development.

DISCUSSION: The Superfund program needs a broad range of treatment technologies to address the widely varying chemical and physical characteristics of waste/soil/water mixtures found at sites. Although a lot of technology development and adaption is taking place in the private sector, very few of these technologies have actually been used at Superfund sites. Without this experience base, the performance and costs of these technologies are highly uncertain. Project managers are reluctant to choose them as remedies. To break out of this "chicken and egg" dilemma EPA has implemented a program (SITE) to allow developers to bring technologies to Superfund sites to demonstrate their performance.

The SITE program was established in the 1986 Superfund Amendments (311(b)) to help provide the treatment technologies necessary to implement new clean-up standards in the law. The goal of the program is to maximize the use of alternatives to land disposal in cleaning up Superfund sites by encouraging the development and demonstration of new, innovative treatment and monitoring technologies. The program is implemented as a joint effort between OSWER and ORD. ORD, through the Risk Reduction Engineering Laboratory in Cincinnati, provides the personnel responsible for managing individual projects.

Although the program has several components, the primary focus has been the Demonstration Program. This addresses the demonstration and evaluation of innovative full-scale or pilot-scale technologies that can be scaled up for commercial use. These technologies are considered to be fairly well developed and almost available for selection for remediation of Superfund sites, but are tracking operating experience in the field on actual wastes. Firms are accepted into the program through a formal annual solicitation. Demonstrations usually occur at Superfund sites or under conditions that duplicate or closely simulate actual conditions. The developers are responsible for transporting and operating their equipment during the demonstration while EPA assumes the remaining costs for planning, sampling and analysis, and evaluation. Although the law allows funding up to 50% of operating costs when developers can't pay, the terms are quite restrictive and the Agency has not provided funds directly to any developers.

At the present time, approximately thirty projects are in various stages of demonstration and/or evaluation. Over one hundred proposals were submitted in response to the first three solicitations. The primary reason for rejecting proposals has been that technologies are not ready for field demonstration (i.e., inadequate data or no operational unit available) or the technology is not applicable to Superfund problems.

Ten field demonstrations have been conducted and a like number are planned this year. To date reports on six of these demonstrations have been published. A concern of the Superfund program is that it is taking ORD too long to complete and distribute project results.

Another component of the SITE program is the Emerging Technologies Program for the investigation of technologies that are not ready for full-scale demonstration. The focus is on the evaluation of units which show promise at the pilot or laboratory scale. Two-year funding is available through competitive cooperative agreements. While approximately seventy proposals were submitted in response to each of the first two solicitations, the Agency will fund only about seven projects per year.

Although the SITE program is off to a decent start, it must be streamlined and modified to more fully satisfy technology information and development needs. Opportunities exist to help evaluate and support technologies not covered in the existing program. This includes additional emerging technologies which require further laboratory testing and pilot scale development. It includes demonstrating additional innovative technologies that require more data and other kinds of information before they can meet current qualifications for the demonstration program. It also includes new innovative or available technologies which are being used commercially for the first time at Superfund sites--not as SITE demonstrations, but as the selected remedy for clean-up. This latter type of "real world" performance data can be particularly important, especially in the areas of process reliability and cost.

Other expansions have been suggested by those familiar with the SITE program. Evaluating combinations of technologies is one example. Currently, the site program focuses on individual technologies, but often two or more technologies must be combined to treat a waste. For example, soil contaminated with metals and volatile organics might require use of a thermal process to extract the organics, followed by use of a washing process to chemically remove the metals. Each of these steps involves subsequent steps to treat the extracted organics and metals. It may be difficult to find vendors willing to team-up on site demonstrations, but to date a focused effort has not been made to do so.

There is also a need to expand the range and types of technologies that are currently participating in the program. While thermal and solidification technologies are well represented, others such as biological, soil washing, and physical/chemical treatment are sparse. This is not the fault of the program since the solicitations are open. But to help expand the technology base, special outreach efforts may be needed to bring other technologies into the program.

The lesser focus on emerging technologies in the SITE program has largely been a matter of program priorities. Trying to get innovative technologies demonstrated in the field has appropriately been of higher priority than further development of emerging technologies. But if emerging technologies are not fostered, the pipeline of technologies ready for demonstrations could dry up. One valuable program that is already under development by ORD is the establishment of a "test and evaluation center" where vendors can bring emerging technologies for independent (EPA) testing. This facility will be permitted for this purpose, thus eliminating that as an issue for the vendor. It is important that the current ORD effort be given priority so that the full potential of this facility can be realized in a timely way.

RECOMMENDATIONS: The Superfund Innovative Technology Evaluation Program in the Office of Research and Development should be expanded to demonstrate and evaluate more new technologies, and revised to provide more rapid dissemination of results. Suggested expansions include:

1. **Evaluate performance and cost of technologies already being used at Superfund sites.**
2. **Conduct additional demonstrations of innovative technologies.**
3. **Support development of emerging laboratory and pilot scale technologies.**
4. **Establish a fully permitted and licensed test and evaluation center.**
5. **Evaluate combinations of technologies in addition to individual technologies.**
6. **Provide rapid reporting of demonstration results through performance bulletins and by placing results in an information clearinghouse. Reduce production time for full reports.**

7. Suggest ways to eliminate internal barriers to the introduction of new technologies into the Superfund program.

EXPAND RESEARCH TO DEVELOP NEW TREATMENT TECHNOLOGIES

FINDINGS: Although many new technologies begin in private-sector research laboratories, EPA supported research is a necessary and important ingredient to expanding development of new treatment technologies due to gaps in private research.

DISCUSSION: Continued research is needed to promote the development of new technologies suitable for cleaning up contaminated sites. For example, additional research is needed on in-situ removal and recovery of organic contaminants as well as methodologies to remove these contaminants from groundwater beneath the site. The effectiveness, costs and cross-media impacts of these technologies must be investigated. Other research is needed to provide technologies for the removal of contaminants from soils, sludges and sediments. In order to be cost-effective, the technologies developed must return a large portion of the cleaned soil to its original site with only the concentrated contaminant to be treated or removed. Several additional treatment technologies should be developed to determine their effectiveness for soil and debris clean-up. Improved combustion technologies for destroying contaminants in soil must also be developed.

To a large extent private sector research is being relied on to develop the technologies needed to clean-up Superfund sites. The profit potential of successful technologies provides a natural incentive for this research. Many new technologies have come to the market in this way. But private sector research does not completely address the needs for new technologies. Since research can be costly, with payback many years in the future and uncertain at best, private research is often limited to just a handful of technologies believed to offer the greatest potential for commercial success. Some companies conduct little or no research, waiting instead for someone else to successfully prove a new concept that they can further develop.

Given this situation, and the need for many new technologies to match the wide range of waste types and mixtures at differing sites, continued EPA supported research is needed. A recent report on EPA's research activities by the EPA Science Advisory Board emphasized the need for a stronger long range EPA research program. To carry out this research the Agency should continue its practice of support to universities and other non-profit institutions and should devote some of its own people and laboratory facilities to this effort. To the maximum extent possible, EPA should focus its research on areas not adequately being addressed by the private sector.

Congress passed a new law in 1986 that greatly improves the potential for EPA research to be adopted and commercialized by the private sector. This law, the Federal Technology Transfer Act, P.L. 99-502, allows the laboratories of Federal agencies to enter into cooperative R&D agreements with private companies, universities and state and local governments. The laboratories may enter into a variety of cooperative agreements and may accept, retain and use funds, personnel, services and property from collaborating parties in the interest of R&D and commercialization of issuing technologies.

ORD has successfully implemented this new authority to license its patented technology for the control of emissions from coal-fired boilers. A number of other promising licensing and joint-venture opportunities are currently under negotiations or being explored.

RECOMMENDATIONS: **In-house and university research programs should be expanded in a few, targeted areas where private research is lacking. The Office of Research and Development should convene an advisory group of industry and academia to develop a priority list of areas where expanded EPA research is needed and where the private sector is not currently engaged. EPA should actively conduct or support research in areas where there is limited private sector involvement.**

REDUCE INSTITUTIONAL BARRIERS TO COMMERCIALIZATION OF INNOVATIVE TREATMENT TECHNOLOGIES

FINDINGS: Many companies and entrepreneurs who develop technologies in their laboratories are unable to successfully commercialize them even though they may be technically sound. This is often due to lack of financial resources, unfamiliarity with the marketplace, or inexperience in dealing with government requirements.

DISCUSSION: A series of planning, marketing, financing, regulatory and other requirements must be addressed before a technically viable treatment technology becomes commercially available. While well established, financially sound companies may be experienced in addressing these issues, many of the newer and smaller firms that often develop treatment technologies are not. Adding to the problem is the complexity of the market for these technologies.

There are great market uncertainties caused by changing statutes, as well as State and Federal regulations. The potential for the health of neighboring populations to be negatively affected in a site cleanup also presents potential legal and financial liabilities.

The technologies are inherently costly, so that even building a prototype can require substantial financing; but lenders are reluctant to put up capital unless they see test data substantiating technical viability and a credible marketing plan. This creates a classic "chicken and egg" problem.

There are no easy solutions to these problems, but without a helping hand many promising technologies may never make it to the marketplace. EPA has recently embarked on one program that holds promise for providing the help needed.

The Office of Research and Development has recently established a unique partnership of government, industry, and academia that is dedicated to assisting with the commercialization of new environmental technologies and products. This partnership is called the National Environmental Technology Applications Corporation (NETAC). This new partnership, which is still under development, proposes to provide a wide range of commercialization assistance, including business development (market analysis, financing analysis and referral, and planning), regulatory assessments and coordination, patent and licensing support, and related services. The partnership will also provide facilities where companies can test and evaluate their technologies to generate the technical data needed for financing and marketing. Education, training, and technology transfer are other planned activities for NETAC.

This new partnership offers great potential for bridging the very difficult commercialization gap faced by innovating entrepreneurs. This prototype partnership should be aggressively developed and given a high priority. Although the NETAC charter is broader than hazardous waste technologies, priority should be given to some early efforts in the hazardous waste area. If NETAC is successful, it may serve as a model that can be duplicated in the nation.

RECOMMENDATIONS: The Office of Research and Development has recently established a partnership of government, industry, and academia called the National Environmental Technology Applications Cooperation that is dedicated to commercialization of new technologies and products. It should receive strong support and emphasis within the Agency to ensure rapid, full implementation.

V. AN AGGRESSIVE PROGRAM OF COMMUNITY INVOLVEMENT

CHAPTER V

AN AGGRESSIVE PROGRAM OF COMMUNITY INVOLVEMENT

INTRODUCTION

In a very fundamental sense, EPA's Superfund staff are working for the people who live near Superfund sites. These people -- "the affected public" -- are the ones whose health may be threatened by contaminated soils or drinking water. They have often had to put up with the site for years, unsure of its effects. Typically, the initial EPA investigations of the site raise both fears and hopes: fears that the risks may be worse than they had thought, and hopes that the government will finally do something about it.

EPA owes these people action: we owe them accurate, timely, understandable information about the site, its risks, and what we are doing, and we owe them a chance to influence what will be done about the contamination. EPA must communicate: we must listen, and we must respond.

As discussed in other chapters of this report, the public finds the pace of Superfund cleanups to be unacceptably slow. At some Superfund sites, however, the public's relationship with EPA has still been quite positive. At these sites, EPA staff met with the public early and often. They clearly explained to the public the reasons for the length of time until cleanup, and they shared the results of their studies along the way. The public developed a deeper understanding of the problems of contamination, what can be done about them technically, and how EPA will make cleanup decisions. EPA staff now understand the public's concerns, and have found ways to respond to them.

At other sites, frustration has been the more typical response. To the public, the "Super" "Fund" conjured up images of quick cleanup, with Uncle Sam footing the bill. But the reality was quite different. EPA took some years to add these sites to the Superfund list after its initial investigation of them. Long and complex studies came next. The companies that caused the pollution in the first place began to play a major role in carrying out first the studies and then the cleanup. Citizens became frustrated by the delays and doubted the information produced by the studies. EPA went into long negotiations with the companies, leaving citizens in the dark about what was going on. Frustrations mounted. Citizens began to ask whether EPA is more interested in protecting them, or making a deal with the companies.

A Tale of Two Sites

In Woburn, Massachusetts, there are two Superfund sites that illustrate contrasting approaches to the community and contrasting results.

At the Industriplex Site, EPA communication with the public virtually ceased during years of protracted negotiations with the PRPs before the design of the remedial action. Angry citizens involved their congressmen and senators, and attracted day after day of critical coverage in the local paper. When EPA finally held public meetings on its proposed actions, the room was packed with loud and hostile crowds.

At about the same time, EPA was also working on a nearby site, a contaminated municipal wellfield known as "Wells G and H". EPA's Remedial Project Manager worked actively and aggressively to inform the community there about the status of the site and to involve the citizens in making decisions about cleaning it up. She sent out regular fact sheets and press releases, and she met frequently with the public and the local citizens group. The site mailing list was expanded to included hundreds of residents, who were invited to join a work group to represent citizens' preferences during the earliest stage of developing the Feasibility Study.

When the study was about one-third complete, EPA held an information session to familiarize the community with the remedial technologies and to solicit their initial reactions and ideas. After this extensive community involvement, the public meeting on the proposed cleanup plan was a constructive working session. Fifty people listened attentively and offered cogent comments as partners in the process, rather than as angry adversaries. EPA is now writing the Record of Decision to choose the final remedy.

In reviewing EPA's record in community involvement, the task group combined case studies and interviews. We examined in detail events at four sites: the Koppers and McColl sites in California, the Toms River site in New Jersey, and the Industrial Excess Landfill site in Uniontown, Ohio. We interviewed citizens, local officials, state staff, and EPA staff at each of these sites. At a national level, we interviewed the staff of several national environmental organizations, and participated in joint discussions with staff of the House and Senate. We also interviewed EPA staff and managers in the regions and in Headquarters. We organized our work around five major topics: citizen views of PRPs, citizen involvement in EPA decisions, citizen access to information, EPA's communication with citizens, and the Technical Assistance Grants (TAG) program. In total, our conclusions are based on over 90 interviews.

EXPANDING THE PUBLIC'S ROLE IN AN "ENFORCEMENT FIRST" PROGRAM

FINDING: Citizens see a fundamental inequity between their role in the Superfund program and the role of the potentially responsible parties ("PRPs"), who have more access to EPA, and more information, expertise and resources with which to fight for the decisions that they want.

DISCUSSION:

Citizen perspective on PRPs, in a Nutshell

We didn't cause this problem, but we're living with it. We have a right to influence cleanup decisions. The company that caused the problem will have much more influence than us on these cleanup decisions. They will have high-powered attorneys and technical advisers who speak EPA's language. They have access to information that we do not have, and they have lots of time and resources to devote to influencing EPA's decision. This situation is unfair to us.

Citizen Concern About PRPs

The most consistent finding from our case studies and interviews is the strongly held belief of citizens that the polluters who caused a Superfund problem cannot be trusted to study the problem objectively or to clean it up. "There is a built-in conflict of interest for PRPs," said one citizen.

Compared to citizens, PRPs are seen as having unfair influence on cleanup decisions. They have easy access to EPA through technical meetings and negotiation sessions. PRPs often directly control data on which remedial decisions are based by conducting the Remedial Investigation and Feasibility Study, subject to oversight by EPA, which is seen as less than consistently effective. Citizens see themselves systematically excluded from technical and negotiation sessions with PRPs. The formal views that citizens express during the comment period on a proposed remedial action have much less weight than the views of PRPs, because the PRPs can frame more effective technical arguments and because potentially responsible party willingness to carry out a remedial action may affect EPA's choice of remedy.

At all four sites examined in this review, the role of PRPs in site investigation and cleanup was an important issue. Citizens near McColl cited Exxon's track record in the Alaska oil spill as an example of corporate behavior that they feared. At McColl, EPA carried out the remedial investigation and feasibility study, but PRPs may carry out the remedial action. Exxon itself is not a PRP at the site, but is a symbol to the citizens of their reasons not to trust corporations to do environmental cleanup. At the Koppers site in northern California, citizens mistrust the operator of the site, and are concerned about a long history of pollution problems caused by the site. At the Industrial Excess Landfill site in Uniontown, Ohio, there is deep animosity between the active citizen group and the PRPs. When the PRPs rejected a citizen request for a direct Technical Assistance Grant by sending the group an unsigned letter bearing no company's identifying letterhead, citizens saw this as brusque and insensitive.

At the Toms River, New Jersey, site, citizens are opposed to Ciba-Geigy's activities, but the relationship between citizens and the Company is somewhat different than at the other sites. Citizens were strongly opposed to letting the Company conduct the Remedial Investigation and Feasibility Study, but they are not so opposed to having Ciba-Geigy carry out the remedial action itself. Of the four case studies, Toms River is the only site where citizens seem comfortable with the idea of PRP cleanup work. There seem to be four reasons why they tolerate PRP involvement. First, EPA has been heavily involved with the site and has worked directly with the citizens. The citizens do not appear to question EPA's effectiveness or trustworthiness. Second, Ciba-Geigy funded a direct "Technical Assistance Grant" to the citizens, at the urging of EPA Region 2. Third, Ciba-Geigy has given citizens direct access to information about the site. Fourth, the citizens have been meeting directly with EPA and Ciba-Geigy to discuss their technical concerns. Even with this background, however, citizens still expressed their fear that Ciba-Geigy would have undue influence on the impending cleanup decision.

Citizen Concerns about EPA

EPA staff often are puzzled about why the public seems not to trust them. They see themselves as the people hired to carry out the Superfund law, representing the public interest in clashes with the responsible parties. But many citizens see EPA staff quite differently. They have a skeptical view of government generally, and they often have an unfavorable impression of Superfund, drawn from press coverage and the barrage of criticism leveled at the program nationally. In their initial encounters with EPA, their expectations for quick action are not met. They may wonder whether their idea of cleanup is the same as EPA's. They may be somewhat overwhelmed by technical complexity and resent losing control to the "experts". In that setting, citizens may not be willing to completely trust EPA to represent them in confidential negotiations with PRPs.

RECOMMENDATION:

If EPA is to gain public support for an "enforcement-first" approach to Superfund cleanups, EPA must correct this imbalance by giving citizens a greater role in Superfund decisions. It is critical that EPA have -- and be seen to have -- a fair and open process

that gives citizens some measure of control over what will happen. Three major sections of this chapter contain specific recommendations that are important in correcting the citizen/PRP imbalance. Briefly, they cover these points:

> **1. EPA should involve citizens more extensively in the process of making decisions about clean-up at Superfund sites, including innovative ways of bringing citizens and PRPs together to build a consensus (see pages 5-5 to 5-8).**
>
> **2. EPA should assure that citizens have access to the same technical information about the site that EPA and the PRPs have. (see pages 5-13 to 5-15).**
>
> **3. EPA should reform the Technical Assistance Grants program to eliminate barriers to their use (see pages 5-16 to 5-22).**

In addition, EPA should strengthen its oversight of responsible party work. This issue is covered in Chapter Two. Its importance is underlined here, however, because of the emphasis placed on this point by citizens.

INVOLVING CITIZENS IN DECISIONS

FINDINGS: Citizens question whether they actually influence EPA decisions, or whether EPA's community relations program is really just "sophisticated public relations." EPA managers have mixed feelings about public involvement. Some are strong supporters of it; others object because of philosophy, cost, and delay.

DISCUSSION: Some critics of EPA charge that EPA's community relations program is primarily a "public relations" program rather than a "public involvement" program. They mean that EPA is concentrating on giving communities information, not on finding ways to learn about their concerns and give them some weight in EPA's decision-making process. People do give EPA high marks for the quality of the information it puts out, but they want EPA to make the communications process a two-way street.

Philosophy

Some EPA managers believe strongly in the role of citizens in decision-making. A regional manager said: "Better community relations will always lead to better site work. The public is our best critic and judge of acceptable performance." A Headquarters manager said: "An open process leads to better decisions. It lets citizens add fresh information to the process. It forces EPA to defend its assumptions, judgements, and decisions, and it exposes their weaknesses." However, other EPA managers believe strongly that Superfund decisions are primarily scientific, and that citizens are unlikely to be able to raise the kinds of evidence or questions that they will find persuasive. These managers tend to stress EPA's obligation to inform and educate the citizens, but they tend not to give citizen concerns substantial weight in their decisions.

Cost

Allowing people to participate meaningfully in Superfund decisions requires extensive resources, because the decisions and the problems are so complex. Some managers and RPMs who support more extensive public involvement are simply unable to do much more without sacrificing other important objectives of the program, such as technical oversight of PRP or contractor work.

Delay

EPA is frequently criticized for being "bean-driven" -- that is, for putting deadlines ahead of other important considerations, such as citizen concerns. At the same time, EPA is also criticized for not meeting its deadlines and for the slow pace of the program. This tension is intrinsic to Superfund. We found RPMs uncertain about the relative priority of citizen concerns and adhering to schedules. One RPM said: "What does Headquarters really want? Do they want us to meet deadlines no matter what, or do they want us to be responsive to citizens?"

A good example of this tension is when citizens ask for more sampling in order to better understand the contamination at a site. If this request is made after the remedial investigation is completed, responding to it usually means delaying the schedule for the remedial decision. The additional cost of sampling can also be a constraint. While some requests for additional sampling may have little technical validity, others may be warranted, but site managers are unable to respond to them because of limited budgets or impending deadlines.

Another practical problem confronting site managers is how much time they should allow for public comment and response in their planning for ROD deadlines. While some sites with little or no controversy can be handled with the minimum 30 day comment period, experience has shown that a 60 day comment period is much more reasonable whenever citizens or PRPs are actively involved.

RECOMMENDATIONS:

The Administrator should strongly support increased citizen involvement in Superfund decisions, dedicating the resources necessary for greater citizen involvement, and accepting occasional delays as a result.

EPA managers and staff should listen carefully to what citizens are saying, take the time necessary to deal with their concerns, change planned actions where citizen suggestions have merit, and then explain to citizens what EPA has done and why.

Regional managers should factor adequate time for public comment and response into their planning for ROD deadlines.

The standard public comment period on EPA's proposed plans should be 60 days (rather than 30), whenever citizens or PRPs request it.

Regions should have a discretionary fund that they could use to fund additional work necessary to respond to citizen concerns.

FINDING: EPA cannot always do what citizens ask. Citizens do not always get clear, candid explanations from EPA about its actions, however.

DISCUSSION: There are limits to EPA's ability to respond to citizen concerns. The law can be an important constraint. Sometimes EPA clearly lacks authority (oil and gas problems are excluded from Superfund, for example). Sometimes EPA believes it has sufficient legal authority to take an action, but the PRPs challenge that authority. For example, at the Koppers site, citizens wanted air monitoring, but the PRPs challenged EPA's legal basis for requiring it. EPA eventually did the monitoring, and a court ruled in EPA's favor on the challenge by the PRPs. Despite this effort, relations with the community remain strained.

Clear, candid explanations of the reasons for EPA's decisions are often a missing element in EPA's relationships with citizens. Responsiveness summaries are a formal tool for providing such explanations. However, these summaries often seem to citizens to be defensive legal exercises by EPA to prevent legal challenges to its decisions.

RECOMMENDATION: Whether EPA can do what citizens ask or not, we should always provide them a clear explanation of the basis for our decision. A responsiveness summary should reflect a genuine attempt to come to grips with citizens' questions and concerns; it should not appear to be an advocacy brief piling up evidence for why EPA's original decision was the only possible one.

FINDING: The earlier that EPA establishes a working relationship with citizens near a site, the greater chance there is for trust and confidence to develop between the parties.

DISCUSSION: It has long been a principle of EPA's community relations program that early involvement is critical to a successful working relationship with the public near Superfund sites. Citizens are still concerned, however, that they are sometimes brought into the process later than they would like. One important early point for citizen involvement is EPA's initial investigation of a site (the Preliminary Assessment/Site Inspection). Another early point of concern to citizens is the initial development of EPA's community relations plans at sites on the National Priorities List.

The selection of the cleanup remedy is not the only important decision made at a Superfund site. Significant decisions are made throughout the Superfund cleanup process. Key decision points include (1) the scope of the Remedial Investigation (what contaminants to look for); (2) screening alternatives for the Feasibility Study (what ways are there to clean up the site); (3) what treatability studies are needed; (4) the selection of remedy through the Record of Decision; and (5) any modifications to the selected remedy as a result of the remedial design work.

One Headquarters manager suggested that EPA should have a "docket" approach to its Superfund decisions at each site. By that, he meant that EPA should add documents to the administrative record as they become available, and be open to receiving comments on the accumulating information and studies about the site. This approach would allow citizens or PRPs to provide comments at any stage of the Superfund cleanup process, rather than just waiting for the formal comment period on the proposed plan.

RECOMMENDATIONS:

EPA managers and staff should plan for citizen involvement at each stage of the Superfund process, beginning with the initial investigations at a site.

EPA should discuss site findings and decisions as they are developed, not only at the end of the Feasibility Study.

While a formal comment period is required only at the Proposed Plan stage, EPA should make documents available to citizens and to PRPs throughout the cleanup process, and be open to receiving comments continually as well.

MAINTAINING CONSISTENT COMMUNICATION

FINDING: EPA's communication with citizens near sites is not as frequent as site managers and community relations staff think is necessary. Citizen expectations of what constitutes regular and consistent communication are even higher than what EPA thinks is "frequent".

DISCUSSION: Communicating to the public is the strongest part of EPA's community relations program. Fact sheets are widely used to let the public know what is going on, and to explain the complexities of site contamination, risks, cleanup options, and EPA's study and decision procedures. EPA Headquarters has written some excellent fact sheets explaining the Superfund program generally, and regional fact sheets on particular sites are often very good. EPA staff meet with people in their homes, and they use small group workshops, public meetings, and public hearings, as appropriate. EPA Headquarters has sponsored training on community relations and communication skills; a course on risk communication is the newest offering.

We found, however, that regional community relations staff and site managers believe our communications program does not start early enough and is less consistent and effective than is necessary. As a result, EPA is not meeting citizen expectations for consistency and continuity in communications.

Resource Problems

Limited time and resources for regional staff keep them from doing the communication they think necessary and essential. Site managers and community relations staff are concerned that EPA may be letting some potentially serious conflicts develop with communities because they cannot get out to the sites early enough or frequently enough. They must spend their time on sites with long histories of citizen concern and on sites going through the formal public comment process at the proposed plan/Record of Decision stage. At other sites, their contact with citizens is irregular at best.

Fixing this problem is not easy. It is simply part of the larger problem of resources for all the staff that implement Superfund in the field. Staff we talked to believe that the site managers and the community relations staff need more time to devote to communications. (The division of responsibility for communicating with citizens varies from region to region. In some cases the site manager carries the primary responsibility, while in other cases the community relations staff does.)

In addition to increasing EPA's own staff, there are a few other ways of increasing the resources devoted to communications with the public:

1. Regions are hiring Senior Environmental Employees to work with the TAG program. These people are retirees hired by a senior citizens organization, such as the American Association of Retired Persons, to work for EPA. These employees do not count against staffing ceilings, and EPA's experience in using retirees to represent the Agency has been quite good in the asbestos program. All the regions have contracts in place to hire such staff as they need them. Regions could experiment with using these staff for more extensive communications work besides TAGs.

2. Where sites are located at some distance from EPA's regional office, it is usually difficult for EPA staff to see citizens in person very often. As a variation on option #1, EPA could hire retirees who live in the community near the sites. These employees could work on a part-time basis to inform local officials, citizen groups, and other community leaders about developments at the site.

3. Using state or local officials to represent EPA at sites is another way of coping with the limits to EPA resources and the distance problems. At the Bunker Hill site in Idaho, for example, a local health officer of the state health agency serves as the community representative for both EPA and the state. EPA supports this position with grant money to the state. One problem at some sites, however, is that EPA and the state (or the local government) sometimes disagree strongly about the appropriate course of action at a site. Such disagreements make it both difficult and inappropriate for a state or local official to represent EPA.

4. EPA also uses contractors to support its community relations work. The results are mixed. In some cases, where EPA has used contractors to communicate directly with the community, citizens have resented not being able to speak directly to EPA. EPA often uses contractors to interview citizens as they prepare community relations plans, however, and this practice is likely to continue, given EPA's staffing problems. Contractors can also be used to write fact sheets, provide logistical support for public meetings, and so forth. EPA's experience is that contractor support is most effective where the contractors can

ensure the continuity of their staff. In that case, the cost of using a contractor to draft fact sheets (or other short turnaround tasks) declines, and the quality goes up. Continuity is so important to communications, however, that more contractor support for community relations cannot be relied on to solve the "consistent communication" problem described above. We must do the bulk of this important work ourselves.

Citizen Expectations

Citizens' perceptions of what constitutes regular and consistent communication are not the same as EPA staff's. We found that citizens expect more than EPA staff, even though EPA staff members think they should be doing more than they are able to do. Where EPA has a successful relationship with a community at a controversial site, there is a consistent pattern of regular, frequent communication with the community.

RECOMMENDATIONS:

The Administrator should increase the number of site managers and community relations staff to allow more frequent communication with the affected public.

EPA should firmly establish communication as a high priority for Superfund managers, site managers, and community relations staff.

Regions should experiment with using Senior Environmental Employees more extensively in Superfund. Where sites are some distance from EPA offices, Regions can hire retirees who live in the communities near the sites to take questions and provide information.

EPA should consider using state or local officials to represent EPA at sites as another way of coping with the limits to EPA resources and the distance problems.

FINDING: Frequent turnover of EPA staff is hurting EPA's communications with citizens near sites.

DISCUSSION: Citizens are frustrated by turnover in EPA staff. Communities complain that they have to train EPA staff about the site. The history of the site matters a great deal to site residents; new government staff do not know the history. Communities feel that they must rebuild their relationship with the new staff, and reeducate them about their concerns. The turnover of any key staff can be disruptive -- EPA's site manager or community relations staff, state staff, or contractors. Citizens often view them all together.

Some of this turnover is inevitable. The turnover of site managers in some regions has been quite high, and similar turnover patterns for community relations staff also exist in some regions. Even where staff are not leaving, there are continuity problems. As the number of sites and the number of EPA staff have increased, some existing staff shift part of their workload to new people. EPA tends not to think of this as staff turnover, since no one has left, but the effect on citizens is the same. Both shifts in workload and staff departures create real problems for EPA's relationship with site residents.

Some regions have dealt with the turnover problem by emphasizing communication with the community. They hold a meeting with the community where the old site manager introduces the new site manager, and explains his or her departure. Some regions have sent supervisors to such meetings to assure the community of continuity. If a meeting is not possible, some departing site managers have written a letter to the community explaining their departure, introducing their replacement, and explaining the reasons for the switch.

Turnover also creates a continuing need for training. The turnover rate of site managers and community relations staff is high enough that only the more experienced regional staff are likely to have received EPA's community relations and communications training. Training is another area where the broader problems for RPMs overlap with those of community relations. New site managers in particular face a formidable list of demands for a variety of technical, administrative, and safety training; communications training is one significant part of that mix.

RECOMMENDATIONS:

EPA should be sensitive to the problems that staff turnover create for the community, and should preserve the continuity of staff assignments as much as possible. For example, these problems should be considered as costs in deciding whether to reorganize.

EPA managers should try to keep continuity and site history on the team if one team member must be replaced. For example: if the site manager is new, the community relations coordinator probably should not be switched.

EPA should educate new staff about the site's history and the community's involvement and concerns, and the importance of those concerns.

EPA should communicate staff changes to the community and demonstrate that their concerns are understood.

EPA should provide communications training (both speaking and listening) to all Superfund staff who deal directly with the public.

ENSURING CITIZEN ACCESS TO INFORMATION

FINDING: Citizens cannot consistently get the information they request. Citizens are concerned that their access to information is much less than that of PRPs.

DISCUSSION: Ensuring citizen access to information is an important goal, but it is sometimes difficult to put in practice. We found examples where EPA staff had worked out practical ways of providing citizens direct access to information about a site. We found other cases where citizens perceived EPA as holding back information from them. There are a few damaging examples of barriers to citizen use of information, such as information repositories only open during the working day, high copying costs, or refusal to release information until Freedom of Information requests were filed. While these barriers are the exception, not the rule, they should not exist at all.

One major reason why EPA staff sometimes withhold information from citizens is that EPA wants to be sure that data are accurate, and that reports done by contractors do not contain misstatements of EPA policy or plans. Yet the delay caused by EPA's review seems to citizens as an attempt to cover up information, raising questions about EPA's motives. Explanations about EPA's need to review or correct contractor work products only cause citizens to wonder why EPA is using contractors at all, if they can't be trusted to do good work. EPA staff thus face a tough dilemma -- they must choose between possibly having to explain errors in an unreviewed draft, or losing trust by being accused of withholding information from the public.

Success story: Bowers Landfill, Circleville, Ohio

EPA Region 5 staff gave citizens a schedule of "deliverables" -- the reports and data that the PRPs were sending to EPA. The citizens were told which products they would get immediately (at the same time that EPA got them from the PRPs conducting the study), and which products they would get on the second draft (to allow EPA review time to assure that the products were accurate). Citizens then knew exactly what information was being produced about the site, and when to expect it.

Another important reason why EPA staff are sometimes unresponsive to citizen requests is that the quantity of information is large, and the costs of providing easy access to it are significant. Hence, EPA staff sometimes tend to rely on the fact that a copy of a document may be in the information repository, and they resist requests for ways of making the information more directly accessible to the requesting citizens. In a program where staff are consistently overworked, it is not unreasonable that they will look for ways to manage their workload.

It is clear that there are real limits to what EPA can accomplish at current staffing levels. Citizens should have reasonable expectations of EPA. At the Uniontown site, for example, citizens have asked for individual copies of EPA's studies for about 15 citizen /leaders as well as for their technical advisers. It is appropriate for EPA to provide copies of relevant reports directly to technical advisers, and it is consistent with the purpose and spirit of this provision of the law. Providing individual copies of lengthy studies directly to many citizen leaders is much less practical, however.

Both these conflicts, however, ultimately damage EPA's credibility with citizens, which depends heavily on citizen confidence that they can count on EPA to share all information with them. One EPA regional staffer observed:

> The costs of not giving information to citizens, of being seen as closed and secretive, far outweigh the costs of giving the information, even of explaining errors in drafts.

RECOMMENDATIONS:

EPA should be more aggressive about supplying information to citizens and their technical advisors. Citizens' access to information should be comparable to that of PRPs. Neither citizens nor PRPs should have to wait until the end of the Remedial Investigation and Feasibility Study to learn the results of the studies.

EPA should ensure access to information by (1) establishing information repositories that are convenient to the affected public; (2) completing any necessary review of documents quickly, so that the documents can be released; (3) placing documents in the administrative record and the information repositories as soon as possible; and (4) notifying citizens of the availability of that information through fact sheets and other mailings.

EPA should require PRPs and its own contractors to write clear, understandable summaries of complex technical documents. EPA should provide copies of those summaries directly to citizens.

FINDINGS: Citizens mistrust EPA's practice of closed-door sessions with PRPs. They feel excluded from the technical debate about a site. EPA success stories in working with citizens often include some open forum for technical discussions throughout the Remedial Investigation and Feasibility Study process. Some PRPs have found a well informed community to be an asset in facilitating a timely remedy selection process that does not arouse community opposition. Some of these PRPs have made technical assistance grants directly to citizens' groups.

DISCUSSION: Citizens have asked to attend EPA's meetings with PRPs. EPA is concerned about allowing citizens access to negotiations, because it is not consistent with practice in disputes where litigation is a distinct possibility. Citizens ask, however, whether there are reasons to exclude them from technical meetings. Access to these meetings does not pose a direct challenge to the legal negotiations, but it does pose some practical problems of whether citizens have a right to notice, to convenient meeting times and locations, to ask and have questions answered, to fully participate in technical debates, and so forth. It is difficult to craft a policy that creates rights without encountering a lot of problems in implementation. Because of these problems, we stop short of recommending that citizens have a right of access to all technical meetings.

On the other hand, EPA's success stories in working with citizens have often included some forum for technical discussions. The enforcement chapter of EPA's community relations guidance encourages technical workshops, preferably with the participation of PRPs. At the Toms River, New Jersey, site, citizens and their technical advisers have met directly with Ciba-Geigy and EPA to discuss remedial alternatives. The Bowers site in Ohio has an information committee of citizens, state and local officials, EPA, and PRPs formed in response to citizen comments on a proposed consent agreement for the PRPs to do the Remedial Investigation and Feasibility Study. For four years, the Bunker Hill site in Idaho has had a task group that serves as a regular forum for meetings between representatives of the community, local officials, state officials, and EPA.

RECOMMENDATION:

EPA should encourage the Regions to find ways to bring citizens into technical discussions early in the Remedial Investigation and Feasibility Study process, especially where there are active citizen groups, technical advisers to those groups, or interested local officials. This may mean involvement in technical meetings with PRPs, or it may mean other mechanisms that have proven successful, such as Technical Review Committees composed of citizens, local government officials, and PRPs. The Agency should also encourage PRPs to provide grants to communities to enable them to acquire independent technical assistance. EPA should provide information and advice to PRPs and citizens regarding the successful use of such grants at other Superfund sites.

SIMPLIFYING TECHNICAL ASSISTANCE GRANTS

FINDING: Technical Assistance Grants (TAGs) are an important symbol of EPA's commitment to public involvement. The TAG program is not working well. Citizens are deterred from using TAGs by the match requirements, and by the complicated application and procurement processes. EPA financial managers are wary of potential risks in failing to exercise strict oversight of the TAG program.

DISCUSSION: Citizens near NPL sites, members of Congress, and national environmental organizations all view TAGs as an important symbol of EPA's commitment to public involvement. TAGs are particularly important as a way of addressing the imbalance between citizens and PRPs, since they are a way for citizen groups near Superfund NPL sites to acquire independent expertise to interpret technical information and to participate in the technical debate about site cleanup.

TAGs were authorized by the 1986 Superfund amendments. In March 1988, EPA issued an interim final rule that allowed the first TAGs to be granted. Nineteen grants have been awarded to date, and technical advisors have been hired at only a fraction of these sites.

EPA's implementation of the TAG program has been roundly criticized by both Houses of Congress, national environmental groups, the Office of Technology Assessment, citizens, and others. The people we interviewed are upset by the delays in establishing the TAG program, the low rate of applications, and the restrictions, complexity, costs, and red tape. They conclude that EPA is trying to frustrate the intent of the statute.

> The perception exists, especially among those familiar with the TAG legislation, that EPA specifically wrote the regulations to discourage groups from applying [for grants] and to resist Congressional pressure to make money more available to citizen groups that might challenge EPA decisions.
>
> -- EPA survey of citizen groups.

A consistent picture of the problems with TAGs emerges from two recent detailed surveys of citizen groups near NPL sites. One survey was done for Congress, and one was done for EPA itself. Both surveys found the following:

- The 35% matching fund requirement is excessive and discourages a significant number of groups from participating in the program, particularly when coupled with the 15% cap on administrative in-kind services.

- The application process is too complex and burdensome. As a result, many groups interested in TAGS do not actually apply. Those who do apply complain about the complexity and length of the process and the time and effort required.

- Few community groups have experience with grants. Even if administrative requirements are simplified, most will need personal assistance from EPA staff, starting early in the application process.

- The procurement regulations and other administrative requirements are too complex and should be simplified as much as prudent financial management will allow.

Our own interviews with citizens and EPA staff confirmed these findings. While EPA may not have deliberately erected barriers to discourage applicants, the Agency's strict and cautious application of federal policies and procedures in the regulations, guidance and its implementation of the TAG program have had that effect.

We believe it is critical for EPA to correct these problems. Citizens deserve an equal voice in technical debates about Superfund sites, and Technical Assistance Grants are an important tool to help them. The rest of this section discusses specific problems with the TAG program and our **recommendations for improvements.**

Matching Fund Requirements

The TAG regulations require grant recipients to provide matching funds equal to 35% of the total of the federal grant and citizen's matching funds. For example, groups must contribute $26,923 in cash or in-kind services to match a $50,000 federal grant. A maximum of 15% of the total grant amount can be used for administrative costs or services. EPA estimates that a group contributing only in-kind services to meet the 35% match for a $50,000, three-year grant would have to contribute about 20 hours per week for those three years.

The matching fund requirements established by the previous Administration go well beyond the minimum requirements set by Congress. The 35% match is more than the minimum 20% Congress required, and the 15% limit on administrative costs has no basis in the statute. These requirements are significant deterrents to applicants because of the money and time necessary to meet them. Any match may discourage some applicants, particularly those with limited financial resources or time. Congressional staff report that these are the very groups the grants were intended to help. A match may also seem an unfair burden to groups who already perceive themselves as victims of the situation or who may already have suffered adverse health or economic impacts. For groups who have no cash or technical expertise and can only contribute administrative services as their match, the 15% cap on administrative costs may keep them from qualifying for a grant. **EPA should reduce the match requirement to the statutory 20%, and should eliminate the limit on administrative costs.**

Congress established the requirement that groups contribute at least 20% of the costs of technical assistance, but provided for waivers of the match requirement "if the grant recipient demonstrates financial need and such waiver is necessary to facilitate public participation in the selection of remedial action."

The TAG regulations for waivers of the match are more restrictive than the law in several ways. First, the regulations say waivers should only be granted in "exceptional circumstances." This language has been interpreted by some Regions and citizens as establishing a more stringent standard for waivers, although EPA Headquarters staff say this was not intended. Second, the regulations require EPA to make three findings to grant a waiver: (1) proof of unusual financial hardship, (2) proof of an effort to raise the match, and (3) proof that a waiver is necessary to facilitate public participation. The first finding is more restrictive than the statute; finding #2 seems consistent with Congressional intent; finding #3 is directly from the law. **EPA should delete the reference to "exceptional circumstances" and should change finding #1 to match the statutory language.**

Finally, EPA interpreted the last clause of the waiver portion of Section 117(e) as a prohibition on waivers after the Record of Decision (ROD) is signed for the last operable unit at a site. This may preclude waivers and therefore participation at sites where the ROD must be re-opened, where decisions affecting the remedy are made after the ROD, where the effectiveness of the selected remedy will be tested during the design phase (after the ROD), or where the ROD is performance-based. **EPA should allow petitions for waivers in these circumstances.**

The Application Process

> The process is tedious and complex. I have prepared applications for grants worth over a million dollars that are simpler and easier to deal with [than the TAG program application].
>
> -- a successful applicant.

EPA has received letters of intent to apply for grants at 93 sites; 36 groups have followed through with grant applications, and the Agency has awarded 19 grants to date. Twelve more applications are still being processed or are awaiting revisions by citizen groups. EPA has rejected five applications, either because of a group's ineligibility or because a group has failed to make needed revisions to its application.

A majority of citizen groups surveyed reported they were frustrated by or did not follow through with the application process primarily because they were overwhelmed by the complexity and bureaucracy of the program and the 35% match. The standard Federal grant application seems complicated to most applicants, particularly the budget portion, which is especially difficult. EPA has added to the burden by requiring applicants to provide additional information to help the Agency determine eligibility and evaluate competing applications.

The application forms and process could be simplified without sacrificing quality, particularly if EPA staff work closely with applicants. **EPA should streamline the application while reserving the right to request additional information if competing applications are submitted. EPA should allow applicants to defer development and submission of the detailed budget until after a grant is awarded.**

The first impression many interested groups get of the TAG process is the inch-thick Citizens' Guidance Manual. Most groups surveyed rated the manual "somewhat difficult" because it was too long, the pages were not adequately indexed, examples were difficult to follow, and some statements were misleading. Not surprisingly, many conclude that the application must be extremely difficult to require such a lengthy manual and may not be worth the bother. **EPA should simplify the manual and develop an index to make it easier to use.**

Hands-on EPA assistance to citizen groups is invaluable from the very beginning of the application process. Most Regions provide such assistance, although this was not always the case earlier. Delays in the application process are less frequent and are shorter than when the program first started, but still occur. **EPA should continue to emphasize help to applicants and expeditious processing of their applications.**

Procurement

Citizens are also frustrated by the complexity of procurement requirements, which many see as out of proportion to the size of the grants and the intent of the law. EPA's survey found that most TAG applicants agree with EPA that some competitive procurement process should be followed to ensure that groups get qualified advisors that will provide them the assistance they want. However, EPA has been criticized for requiring grantees to follow standard federal procurement requirements, rather than adopting simplified, TAG-specific requirements. EPA has also been criticized because the citizen's manual suggests that people are required to do more than the minimum required by law.

A recent Congressional report recommended that EPA simplify the TAG procurement process by issuing a class deviation to apply small purchase regulations for the entire grant amount (the current ceiling is $25,000). This recommendation is controversial within EPA because of the precedent it would set for other small purchases. **EPA should (1) immediately clarify the TAG guidance on procurement to emphasize the flexibility possible under the current regulation and (2) amend the TAG regulations as soon as possible to specify procurement procedures similar to small purchase requirements.**

The Reincorporation Requirement

The reincorporation requirement has kept some groups from applying for or receiving grants. Virtually all parties agree that groups should be incorporated to ensure that individuals are protected, but some groups that are already incorporated and show a history of involvement at a site don't want to reincorporate or are prohibited from doing so by their own rules. **EPA should revise the regulations to allow groups already incorporated and with a history of involvement to apply without reincorporating.**

The $50,000 Limit Per Site

In the regulations, EPA prohibited waivers of the $50,000 limit per site and did not provide for renewal of grants, even though such waivers and renewals are allowed by the statute. This was done to allow the Agency to gain some practical experience with the grants and to reach consensus on what the waiver standards should be. Some groups are already asking for waivers and renewals. **EPA should move quickly to establish criteria for waivers and should amend the regulations to permit them, consistent with the law. EPA should also establish guidelines for renewal of grants where necessary to faciltate public participation in all stages of remedial action.**

Restrictions on Eligible Activities and Groups

The primary concern expressed by some citizen groups about restrictions on eligible activities is the prohibition on collection of new primary data -- i.e., sampling. EPA has reservations about collection of data for several reasons, including the high cost of sampling and concerns about sampling and analysis quality control. There is also some debate about whether taking samples is consistent with the intent of the statute, which provides these grants "to obtain technical assistance in interpreting information...." At the very least, the Congressional study recommended finding some way for the Agency to respond to requests for additional sampling. This appears to be a reasonable idea to respond to concerns about the possible need for more sampling. **EPA should develop some way to accommodate reasonable requests for additional sampling (see related discussion on page 5-6).**

Another problem is a misunderstanding about the proper interpretation of the language in the regulations that funds "may not be used to challenge final decisions." Some citizen groups and EPA regional staff have interpreted this language to mean that the Agency wants to discourage and avert possible challenges to its remedial decision-making. This seems to critics to be another example of EPA's interpreting the law as strictly as possible and restricting participation. EPA's intent was only to prohibit grant funds from being used to finance legal challenges or lobbying, as Congress indicated in the Conference report. **EPA should clarify the meaning of this section in guidance to the Regions.**

Outreach

EPA Regions have used many tools to make citizens aware of the availability of TAGs, including mass mailings, workshops, press releases, calls to citizen groups, newspaper ads, and standard language in fact sheets. However, the low number of applications for grants has called the Agency's outreach efforts into question. The Congressional report and EPA's own survey raise questions about the effectiveness of EPA's outreach. EPA regional staff believe, however, that flaws in the TAG regulations outlined in this report are the most important reasons for the limited number of applications received to date.

EPA should first revise the TAG regulations to make the grants easier to obtain. Then EPA should inform citizens about TAGs once again. We suggest that all Regions insert a standard explanation about TAGs at the bottom of each fact sheet. If a TAG has been awarded at the site, the insert would tell the citizens how to contact the Technical Advisor for assistance. If there is not yet a TAG, the insert would explain how to find out more about the program. Headquarters should develop examples of inserts for Regions to use. In addition, the Agency should use press releases in communities with sites to publicize the changes in the program and the purpose and availability of these grants.

EPA Perception: Significant Financial Risk

EPA financial managers are wary of the potential risks in the TAG program. They are generally being held to a high standard of care and documentation for any Superfund expenditure, either because of the specialized nature of the trust fund, or because of the litigation potential for cost recovery. In addition, they are concerned that the lack of established financial control systems in most citizen groups make TAGs more vulnerable to financial mismanagement. One EPA manager called TAGs "super audit bait", and defended extra restrictions and caution in their implementation as absolutely necessary under the circumstances. Another EPA manager recalled some of the financial problems encountered by the poverty program's grants to citizen groups some years ago. These managers are also concerned about the risks to the citizen groups themselves. They do not want to expose well-intentioned groups to the risk of unfavorable audits and attempts at cost recovery from those groups, should funds be spent unwisely or illegally.

We believe that these concerns are legitimate. Financial systems are like safety systems; they seem unnecessary most of the time, except when something goes wrong. The problem with TAGs, however, is that the very inexperience of the citizen groups that makes financial managers nervous also makes the burden of EPA's financial procedures especially heavy for these volunteer organizations. The question that EPA must confront is whether the financial risks of the TAG program are so high as to warrant the present degree of financial controls and cautious implementation. We believe that the benefits of the TAG program outweigh the financial risks of fewer and less rigid controls. **The Administrator should explicitly encourage EPA managers to run the TAG program with the minimum red tape necessary to meet legal requirements, and should make it clear that the Agency is willing to take the financial risks entailed in this program.**

State-Lead Sites

Currently, states are not taking a lead role in administering the TAG program. A survey of nine states found that most of them are not interested in administering the program because of financial and staffing constraints, as well as perceived problems with the program. Most were unaware that EPA provides administrative assistance to states involved in the program. Since states typically handle community relations at state-lead NPL sites, EPA staff may be unable or unwilling to do outreach and adequately judge community interest at these sites. So long as states remain unwilling to participate, implementation of the TAG program at these sites will most likely remain a problem. However, once EPA amends the TAG rules to remove the barriers identified above, states may be more willing to assist in implementing the program at state-lead NPL sites.

RECOMMENDATIONS:

The Administrator should strongly support the reform of the Technical Assistance Grants program to eliminate barriers to their use. Specific recommendations to carry out this reform are included throughout the discussion above. The most important of those recommendations are summarized here:

EPA should amend the interim final rule immediately to (1) reduce the match requirement from 35% to 20%, (2) eliminate the 15% cap on administrative in-kind services, and (3) modify the reincorporation requirement.

EPA should simplify the application process, simplify the procurement requirements, and establish guidelines for grant renewal in cases where circumstances warrant.

EPA should encourage citizen groups to apply, not discourage them with red tape, so long as they demonstrate a willingness to manage TAG grants responsibly and a reasonable ability to do so. The Administrator should acknowledge and accept the financial risks of fewer and less rigid controls, flexibly applied by Regions.

A FINAL COMMENT ON EXPECTATIONS

One of the most difficult aspects of public involvement is trying to figure out how much is enough. Some reasonable questions for a reader of this chapter are: how different are these recommendations from what is now being done; how much demand is there for intensive public involvement; and what should we expect in the future?

There is very little in these pages that does not reflect the tried-and-true approaches that have already been found to work by EPA staff at a number of sites. We found that many EPA staff already are working hard to be good communicators and involve the public in key decisions, within the limits of their time, resources, and experience. The consensus we found is that more is needed, but that does not mean we envision the need for the most elaborate programs at every Superfund site around the country.

A group of regional site managers estimated that about one-quarter to one-third of Superfund sites were sufficiently controversial to warrant fairly extensive communication and citizen involvement programs. That estimate is crucial, for the practicality of carrying out a more extensive public involvement program, which is what we are advocating in this report, depends very much on the number of sites where the Agency needs to increase its efforts. Our sense is that EPA should inform citizens early at all sites, and should then work most intensively at those sites where there appear to be substantial citizen concerns and incipient controversies. While there may be claims that all citizens at all sites deserve our complete engagement, we can only say that it seems reasonable to us to focus our communications and citizen involvement resources on the highest priority sites, just as we focus our technical resources.

Finally, the strategy articulated for the Superfund program at the beginning of this report carries important implications for community involvement. Where sites will not be completely cleaned up for some time, EPA's relationship with the nearby communities is critical to their acceptance of EPA's strategy. Community acceptance will depend upon confidence that EPA will finish the job and that EPA and its staff are to be trusted. Regardless of the wisdom or quality of EPA's overall management strategy for Superfund, gaining this confidence and trust will require a substantial investment in community participation at each Superfund site.

VI. MANAGEMENT AND ADMINISTRATION:

FREEING UP THE SKILLS AND TOOLS TO DO THE JOB

CHAPTER VI

MANAGEMENT AND ADMINISTRATION: FREEING UP THE SKILLS AND TOOLS TO DO THE JOB

INTRODUCTION: The breadth and complexity of the Superfund program have presented enormous administrative management challenges to the Agency. Superfund required EPA to hire a new breed of employee, to create new and responsive administrative systems to support them, and to design a management structure to effectively direct an extensive contractor workforce. It shifted EPA's focus from a predominantly regulatory and research mission to an operational one. From an administrative management perspective, EPA has not been as successful in developing the support systems Superfund needs as it could have been; however, it has the talent to face these challenges. This paper outlines some important aspects of the administrative strategy needed to make mid-course corrections which will make us more successful in the future.

Effective administrative strategies are basically plans for deploying people and tools to support getting the job done. Superfund's goal is quick, safe cleanup; tackling the most dangerous sites first and requiring private parties to conduct or pay for the clean-up wherever possible. Clearly, the most critical area requiring improvement is the manner in which EPA goes about hiring and retaining a technically skilled field staff and a capable cadre of field enforcement attorneys. Turnover among key field staff, as high as 20% in some areas, leads to slow-downs in site cleanups, a loss of technical expertise, and a disruption in relations with the communities and States. EPA needs to offer a competitive compensation and retention package in order to attract and keep staff who are the critical linchpin in the Superfund program.

Internal reports have shown that salary and benefits are not the only reason people leave the Superfund program. A major disincentive is the overwhelming amount of paperwork, lack of secretarial support, inadequate working space, and lack of the tools to access information systems. All bureaucracies tend to over-regulate themselves. In this case, the natural tendency to do so is unacceptable if we expect to clean up hazardous waste sites effectively. Freeing up the field staff from administrative duties so they can concentrate on technical, community and legal issues is a simple strategy and one that will yield demonstrable results.

The task group's recommendations will yield more time for field staff to do their jobs and to do them well. The field staff needs to have the time and the opportunity to both maintain and expand its technical skills as changes occur in the program and in state-of-the-art technology. This paper outlines the Agency's commitment to training field staff at all levels by supporting and strengthening the existing program.

This paper also presents a strategy to resolve an increasingly visible issue which undermines the confidence of the public and the Congress in EPA's ability to manage its contractor workforce. The issue is whether EPA has the in-house capability to make Superfund policy or whether contractors are increasingly directing the policy development of the program. EPA fully recognizes that the practice of having contractors develop the very policies and regulations that they are charged with implementing in the field is totally unacceptable. We will move aggressively to hire more in-house policy experts, thereby reducing dependence on contractors. In addition, the Agency will take clear steps to ensure that no contractor currently working in policy support areas is using that information to profit or benefit another client in any way.

To be successful, administrative systems must be designed and implemented to support program needs and adapt quickly when requirements shift. The strategies laid out in this paper are right for the direction of the Superfund program, and more needs to be done in the months to come.

ATTRACTING AND RETAINING KEY FIELD STAFF

FINDING: Turnover among key field personnel in the Superfund program is unacceptably high. EPA's pay and compensation system is not competitive with private-sector systems.

DISCUSSION: Of paramount importance to Superfund's success are the 484 field project managers and the 148 enforcement attorneys in the Regions that manage the program in the field. These field staff, called Remedial Project Managers (RPMs), On Scene Coordinators (OSCs), and Field Enforcement Attorneys (FEAs) have not received all of the support they need due to Superfund's explicit policy of giving contractors relative freedom to execute the remedial program in the field.

These project managers happen to be among the best educated and most dedicated of all of our employees. Over 96 percent have college degrees, and 35 percent of them hold Masters or Doctorates. Over half of them hold degrees in engineering. An Agency job analysis reveals that Superfund site management jobs rank high among EPA's most difficult and diverse professions, requiring superior technical, administrative, managerial and communications skills. Most of these people work in excess of 50 hours a week, often in contentious situations, and they burn out quickly.

By and by, these people should have been deployed and supervised by the Agency as if they were an elite force; thus far they have not. Just about 70 percent of all EPA's field project managers are paid at the GS 11/12 level -- only 73 of them have reached GS-13 and two are at the GS-14 level. In other words, in what is acknowledged to be a rapidly shrinking labor pool of qualified technical personnel, the Agency pays these people an average annual salary of about $36,000. In a number of Regions, project managers are leaving EPA to earn twice that amount in the private sector. Moreover, these project managers receive lower performance scores than the average employee in the Regions, and earn less in bonuses and cash awards. Even though these employees manage construction projects worth millions of dollars, almost 20 percent of them were not even rated by their supervisors at performance evaluation time last year. If past performance can be regarded as prologue to the future, one out of every five RPM/OSCs will not be on the job next year. Clearly, the Agency must do everything it can to attract and retain high quality people to serve the public as Remedial Project Managers, On Scene Coordinators and Field Enforcement Attorneys.

RECOMMENDATIONS: The Agency should take immediate steps to offer a competitive compensation and incentive package to its key Superfund frontline personnel:

- **Immediately raise the full performance level of Remedial Project Managers and On-Scene Coordinators from GS-12 to GS-13.**

- **Develop a uniform policy to open up the possibility of promoting regional Superfund Enforcement Attorneys from GS-13 to GS-14.**

- **Pursue initiatives with Congress, the Office of Management and the Budget and the Office of Personnel Management to allow the Agency to:**

    - **pay salaries competitive with the private sector in certain high cost geographic areas;**

    - **accelerate the promotion process;**

    - **design more flexible leave and working hour policies;**

    - **award bonuses to staff who remain with EPA;**

- **provide high-cost, specialized training outside the federal family in exchange for additional government service; and**

- **offer early retirement rights.**

TRAINING FOR TECHNICAL COMPETENCE

FINDING: The technical competence of EPA field staff has been questioned from time to time. EPA acknowledges that it is critical for the public to trust EPA's technical judgments.

DISCUSSION: The General Accounting Office and the EPA Inspector General, along with a number of other organizations interviewed by the task group, strongly emphasized the importance of EPA's training programs to develop quality staff for the Superfund program. The Senate Environment and Public Works Committee has also supported certain specific initiatives in this area; for example, advancing Institutes that tap academic expertise to develop specialized training for field staff. Representatives from the Office of Technology Assessment and the contracting community believe that retention of a technically qualified Superfund workforce in EPA is perhaps the most critical element to the eventual success of Superfund.

During the course of its review, the task group learned that the Superfund program has made considerable progress in strengthening its training component over the past year. It acknowledges the competence and dedication of its frontline employees, all of whom are actively seeking opportunities to enhance their technical skills. While training funds are usually among those typically cut during periods of constraint, EPA's Office of Emergency and Remedial Response has actually increased resources in this area to address the special training needs of all Superfund field staff. Towards this end, EPA has recently launched three new training programs. For new field staff, a six-week session of the new Superfund Academy offers training in all phases of the program, from contracts management to technical issues. A second Academy program provides new field staff with a senior field mentor for on-the-job training for the first six months of the new employee's tour of duty. For more advanced field staff, EPA has created the Superfund University Training Institute. This training program takes place on a University campus and provides learning through case studies of Superfund sites involving groundwater management, controlling pollution at the source, and responding to emergencies.

In addition to the structured training programs offered by the Superfund program, field staff have been enhancing their technical skills by performing in-house remedial investigation and feasibility studies in some regions. This practice is specifically encouraged for all regions in an earlier chapter of the report. In our interviews with RPMs representing the ten regions, the project managers expressed their desire to continue and expand hands-on training, citing both the successful results of the recent in-house remedial investigation and feasibility studies, and the opportunity to develop additional contractor management skills.

RECOMMENDATIONS: EPA recommends improving the technical knowledge, skills, and abilities of field staff through budgeted support of additional EPA training initiatives:

- **Implement a mandatory training requirement for field staff at all levels: Basic, Intermediate, Advanced, and Master. This should serve as an incentive leading to certification of EPA field staff at various levels.**
- **Implement pilots in all regions encouraging EPA field staff to perform remedial investigation and feasibility studies in-house. Reward outstanding achievement in this area. This practice will improve the ability of front-line staff to better oversee contractors in the field.**

PROVIDING FIELD STAFF WITH ADEQUATE ADMINISTRATIVE SUPPORT

FINDINGS: Key field staff do not have adequate administrative support and lack important information management tools. They spend approximately 25% of their time on administrative tasks that could be delegated to clerical or support staff. They also lack the necessary equipment to gain access to the information systems established by the program.

DISCUSSION: Inconsistent administrative support to Regional OSCs and RPMs and the lack of a clear distinction between the roles and relationships of project managers and support staff are major sources of frustration that lowers morale and raises turnover rates among key Superfund personnel.

In 1985, an EPA task group addressed the administrative support issue and concluded that the amount of **administrative burden in the program negatively affected the field staff's ability to focus on contractor oversight, community relations, and enforcement work.** That situation still exists today, in the opinion of the Task Group.

Although the Regions have made progress in this area over the last 18 months, much remains to be done. One recommendation the task group is not making is a mandatory reorganization using some predetermined configuration. Field project managers can be supported successfully through a decentralized system-which may work better in smaller regions--or through a centralized model, which is probably more appropriate for EPA's larger regions. RPM's and OSC's interviewed by the Task Group favored the designation of specialized administrative support staff to handle each site's administrative work. These personnel would become an integral part of the site team, developing strong allegiance and a commitment to completing the site cleanup project. These people would be familiar with all aspects of administrative management, but would not be expected to be expert in every area. They could draw on other administrative experts in the region and know where to get what the site manager needs, thereby freeing up the RPM or OSC to concentrate on supervising contractors and working with communities. In the larger Regions, teams made up of people with varied skills and specialties could be organized into support groups for specially designated sites or groups of sites. Team members could come from both the Waste Management Division and the Management Division.

The most important prerequisite for success appears to lie in the working relationship in the Regions between the Assistant Regional Administrator, who heads the delivery of support services, and the Director of the Waste Management Division or Environmental Services Division, who supervises field project management staff. If this relationship is built upon cooperation and a clear definition of roles and responsibilities, then support systems will work and the site will be cleaned up successfully. For this relationship to succeed, however, staff in both divisions must work together as full partners. Hence, the task group favors action that will create strong working relationships between Superfund staff and Management Division personnel. The approach would be carried out best under the provisions of a Memorandum of Understanding between the leadership of the two programs in the Regions, set around a defined list of administrative tasks.

In the information management area, EPA has made important strides in the past two years. Problems in this area no longer arise from a lack of systems, but rather from a lack of proper equipment and access in many regions. The systems developed include the OSWER Bulletin Board which provides a way for Headquarters to communicate with the field, and more importantly, for OSCs and RPMs to communicate with one another. The Record of Decision (ROD) data base went live in 1989, providing data on remedy selection at sites nationwide. The OSWER Directives System provides access to Superfund program guidance, special directives, and policy decisions in an electronic format, although the system might be more effective if placed on a local area network. WasteLan, a management information and tracking system, is on-line in three Regions and is expected to be up nationwide by September 1989.

All these systems are important to effectively managing information for Superfund. However, the task group found that virtually no personal computers are at the field project managers' direct disposal, and E-mail communications software and modems are sadly deficient. Making personal computers, portable "laptop" computers, communications hook-ups, hardware, software, printers, and other equipment available to OSC/RPMs would improve the flow of operations and strengthen the remedy selection process considerably.

At present, RPMs are largely unaware of the skills and techniques needed to access the on-line systems that have been put in place to assist them. All the systems described above are fairly simple to use. The extent to which OSCs and RPMs make use of them depends not only on the availability of equipment, and the quality of instruction and support they receive, but also on how effectively their supervisors and managers use them in the field.

RECOMMENDATIONS

The Assistant Administrator for Solid Waste and Emergency Response and the Assistant Administrator for Administration and Resources Management should:

* **Work out a format for assigning certain administrative tasks to the appropriate Management and Waste Management Divisions in the Regions. These two Assistant Administrators should then solicit the agreement of the Regional Administrators on the assignment of these administrative tasks in a regional Memorandum of Understanding. Should this approach prove successful, it should be extended to include key activities of Environmental Services Divisions and lawyers in the Office of Regional Counsel. Ultimately, Regional Administrators have the principal responsibility for assuring successful cooperation among the various offices responsible for implementing Superfund in the Regions.**

* **Ensure that all key field staff have immediate access to personal computers, portable computers for the field, related hardware and software and E-Mail capabilities to access the OSWER information systems.**

DELEGATION AND EXERCISE OF ADMINISTRATIVE AUTHORITIES

FINDING: Certain administrative delays can be eliminated through delegating administrative authorities to people more accessible to RPM/OSCs, or to the RPM/OSCs themselves.

DISCUSSION: Field staff interviewed cited paperwork, excessive layers of review and concurrences to be a barrier to efficient program performance. The task group identified a number of areas which the Assistant Regional Administrators and the Waste Management Director should reevaluate to determine whether the authority to complete a task has been assigned to the level most closely responsible for it. For example, RPMs and OSCs recommended eliminating excessive sign-offs and time delays through delegating the authority to authorize travel to managers one level above them. The use of blanket or monthly travel authorizations/vouchers or paperless travel authorizations, coupled with quicker travel advances could go a long way towards reducing delays and frustration for field staff.

Other areas to be considered include making automobiles available for RPMs and OSCs or providing an easy way for them to rent them. The purchase of equipment and other property for necessary site work should be streamlined through the extension of the Bankcard program to the Regional Waste Management Divisions, and delegating OSC/RPMs or persons in the administrative support units the authority to sign for purchases up to $1,000. This would obviate the need for contractors to purchase property and equipment at greater cost to the government. The last area to be examined is simplifying the processes for approving overtime, compensatory time, hazardous duty pay, and stand-by pay.

RECOMMENDATION: The Assistant Regional Administrators and Waste Management Division Directors should examine administrative authorities such as approval of travel authorizations and vouchers, acquisition or the lease of motor vehicles for site-specific work, purchase of necessary site equipment and property, approval of overtime, compensatory time, hazardous and stand-by duty pay and delegate them to the most appropriate and efficient level.

REDUCING AGENCY DEPENDENCE ON CONTRACTORS AND AVOIDING CONFLICT OF INTEREST

FINDING: The Superfund Program's dependence on contractors for certain categories of policy and regulation development has been the object of considerable criticism in Congress and from the public at large. While the practice of using contractors as an "extra pair of hands" in regulatory and policy work may have been viewed as a necessity in the past, it is clear that continuing along these lines in the future threatens the integrity of the program.

DISCUSSION: Public interest groups and Members of Congress are increasingly concerned about the possibility that Agency contractors exercise undue influence on Superfund implementation. At the outset, the Superfund program was legislatively designed to utilize a large contractor workforce, thus minimizing the growth of a large EPA bureaucracy. This approach is sound only if the lines between what work is done by EPA employees and what support is appropriately provided by contractors are clearly drawn.

In a program as broadly complex as Superfund, even well-intended contractors can find themselves in awkward positions. Conflict of interest situations arise when a set of conditions impairs the objectivity of the contractor working for EPA. This has been most problematic in the Superfund Program when a firm is awarded a contract for a clean-up program that they also helped to design. A real potential for conflict arises if the firm recommends using cleanup technologies or methods offered by its subsidiaries or is charged with implementing in the field the very policies or regulations it developed for EPA in Washington.

The task group agrees that EPA contracts managers need to collect information on where contractors are working and where they have worked in the past. EPA must develop procedures to apply its own independent judgment to potential conflict-of-interest situations, and not rely solely on self-certification by contractors. Contractors too need to know where they can get fast answers to their questions about potential conflict situations.

Many of EPA's policy support contracts are large, open-ended "mission contracts" that provide considerable flexibility to EPA and contractors in making and receiving work assignments. The key activities that are written into the scope of work for these contracts are the following:

- Analysis of program, regulatory and legislative issues;
- Drafting of alternative policy approaches and policy guidance;
- Analysis of comments on Federal Register notices;
- Development of technical policies, strategies and plans for Superfund response activities;
- Design and development of new ways of addressing issues related to Superfund regulations, policies and response activities, and;
- Analysis of response policy issues such as remedial/removal cost effectiveness determinations, innovative and alternative technologies, response claims and enforcement policy issues as they affect remedial and removal programs.

The first step is to clearly define the roles, responsibilities and relationships between EPA and its support contractors and communicate them to Congress and the public.

RECOMMENDATIONS: To protect the integrity of the program and to preserve the reputations of participating contractors who are so important to Superfund's success, EPA should begin immediately to develop guidance proceedings and award criteria to preclude firms from holding both policy and regulatory support contracts as well as response action contracts under the Superfund program. Contractors currently involved in such arrangements should be asked to make voluntary disclosures of potential conflict situations and to refrain from executing policy and regulatory analysis or guidance preparation on work they are also charged with carrying out in the field. Superfund program staff should also exercise appropriate care in issuing work assignments.

EPA should immediately develop additional procedures for detecting and avoiding conflict. This should include issuing clear guidance to contractors on what constitutes a conflict-of-interest, and requiring a corporate executive to certify that no conflict-of-interest exists. EPA should also send procurement review teams to examine Superfund contractors' conflict-of-interest prevention systems.

To fully mitigate the serious perception problem that exists with regard to contractors assisting the program with policy and regulatory development, EPA should begin increasing in-house staff to reduce dependence on contractors. EPA staff should analyze which portions of the current contractor workload should be performed in-house and establish a timetable for phasing manageable portions of this work from contractors to EPA staff.

VII. ACCOUNTING FOR ACHIEVEMENT:

COMMUNICATING PROGRESS TO THE PUBLIC

Chapter VII

ACCOUNTING FOR ACHIEVEMENT: COMMUNICATING PROGRESS TO THE PUBLIC

One of the most significant challenges for the Superfund program is effective communication. It is very difficult to convince people that a site is being "cleaned up" when they cannot actually "see" any measurable activity. Superfund's communication challenges are heightened because the program has always been extremely complex, highly publicized, and often very controversial.

To meet the challenge of telling a story that makes sense to the public, we need to commit to communication goals and efforts that build a basis for public understanding, trust, and confidence. From our task group's investigations, we found that these goals and efforts fall into the five major topics: (1) informing the nation about Superfund; (2) expanding participation in national program development and oversight; (3) making communication part of everyone's responsibility; (4) measuring Superfund progress; and (5) achieving incentives for efficiency and results.

INFORMING THE NATION ABOUT SUPERFUND

FINDINGS: EPA has concentrated its communication efforts in an active community relations program designed to meet the needs of citizens affected by Superfund sites. But there are very different communication needs for community, Regional, and national interests. Inadequate attention has been paid to developing and communicating an accurate, timely, and meaningful national picture of the program. Moreover, the language used to describe the starts and completions of steps in the Superfund process does not convey progress in a way the public can understand. Hence, EPA and its constituencies often interpret and define components of the program differently. This can result in apparent inconsistencies and confuse the audience with differing definitions of success.

DISCUSSION:

Commitment to Communicate

A commitment to communicate must become an integral part of every aspect of the Superfund program. Many people interviewed mentioned that the perceived lack of commitment and willingness to talk with the public about the program severely hampers our efforts to establish and maintain meaningful two-way communication. **Communicating effectively with the public not only enhances the credibility of the program, but can deter potential impediments to program progress.** We found that EPA staff and management do not follow a common philosophy of communication.

PRINCIPLES OF COMMUNICATION

In EPA's work on Risk Communication, we have identified seven basic principles of communication. Although the principles may seem simplistic, they are all too often violated in practice. People who are involved at all levels of Superfund implementation need to accept the following principles as a real working philosophy of communication and apply them in the context of their individual roles in the program.

- Accept and involve the public as a legitimate partner: The Superfund program is mandated, paid for, and accountable to the public. Members of the public have a right to expect more opportunities for meaningful involvement in decision making.
- Plan carefully: Communication concerns need to be factored into all aspects of Superfund program planning. Everyone who works in the program must be viewed (and trained) as a communicator.
- Listen to the public's specific concerns: Frequently members of the public are concerned about issues different from those the "experts" expect them to be concerned about. Exhibiting a willingness to learn from citizen's experience will increase public trust in the program. If we don't listen to the public, we shouldn't expect them to listen to us.
- Be honest and open: To gain credibility, the Superfund program must make a concerted effort to "tell it like it is." People are more willing to accept what we have to say when they feel they are part of an open process. EPA must be more realistic about the progress we are making and what we can and can't do; otherwise the public will always be expecting us to accomplish impossible goals.
- Coordinate and collaborate with other credible sources: The Superfund program has often benefitted by collaborating with other authoritative and trustworthy sources (e.g., Centers for Disease Control, the Agency for Toxic Substances and Disease Registry, and locally respected medical authorities) and needs to continue doing so.
- Meet the needs of the media: The media are a prime transmitter of information about the Superfund program. We need to redouble our efforts to understand and meet their needs.

- Speak clearly and with compassion: The Superfund program routinely asks people to understand and believe things they can't see in circumstances that are generally upsetting. Thus, the program needs to focus on both the words and the tone that it uses to communicate. Presenting EPA as a group of people working to make communities safer, rather than as a bureaucratic organization, will increase confidence in our ability to protect the public's health and the environment. The good news is that when properly presented, the key messages of the Superfund program can be understood and even accepted by most people, if not by everyone.

Need for a National Communications Plan

The interviews revealed that there are very different needs for site-specific, Regional, and national interests. Many people believe we are effectively communicating with communities at the more active Superfund sites. At these sites, our community relations program has maintained a visible role and we have implemented a well-planned program through trained staff and useful support materials. **However, the same effort has not been put into developing an accurate, meaningful, and credible national picture of the Superfund program.**

Members of Congress, local government officials, prominent community members, the media, and public interest groups can have a significant influence on community relations and on the local and national perceptions of the program. From our discussions with Regional staff, it is apparent that we need a comprehensive national communications plan that ensures systematic and continuous distribution of information about Superfund to people who inform and represent the public. As we identify different needs for different groups, we can develop appropriate communication materials to meet those needs. For such a plan to be effective, however, our information must be delivered early, before a problem occurs.

Numerous communication mechanisms currently in place within the Agency can be directed toward getting Superfund information to the general public. These range from the very informal (ad hoc), to the formal (planned); from printed and professionally produced documents, to personal contacts and media presentations; and from communication oriented to a specific local issue, to messages of nationwide importance. Examples of mechanisms we currently use include such publications as general program and site-specific fact sheets, the Superfund advisory quarterly program update, brochures like "The New Superfund: What It Is, and How It Works," and Regional newsletters.

We have also been successful in using visual mechanisms such as videotapes. For example, in Region V the community relations and program staff have effectively used a videotape on cleanup activities at one of their prominent sites to inform the public about the program.

It is apparent from our interviews that our use of these mechanisms could be more effective and broader. There must be an asserted, proactive outreach to the people we have identified as needing to be well informed about the program. To ensure early and effective outreach, the following examples were suggested for expanding or refining what we have in place: public service announcements, distribution of regularly updated site summaries, promotion of available information depositories, informal community and national meetings (brown bag lunches with management), and increased use of videotapes. In addition, professional communicators from the private companies and other government Agencies could teach EPA about innovative communication techniques that have been successful in other sectors.

The Words Get In Our Way

The language used to describe steps in the Superfund process does not convey progress in a way the public can understand. **EPA and its constituencies often interpret and define components of the program differently.** This can result in apparent inconsistencies and can confuse and frustrate the audience.

As indicated by our interviews and the various Superfund reports, such terms as "remedial," "removal," "operable units," and "national priorities list" may be meaningful to those involved with the program, but are often confusing to the public and may, in fact, raise their expectations unrealistically high. Such bureaucratic terms as "fund versus enforcement" or "Headquarters versus Regional" are often viewed by the public as irrelevant. Our findings showed that the public sometimes views these bureaucratic terms as smoke screens meant to dodge accountability because we have not met their expectations or sufficiently explained our actions.

In task group meetings, Regional and Headquarters personnel noted that the media has perhaps the greatest impact on how the Agency and the Superfund program are viewed by the public. Because the media can reach so many, so quickly, it is imperative that reporters, editors and news directors understand what we mean when we describe the program's process and progress.

RECOMMENDATIONS: Develop and implement a national plan to inform the public at large about the Superfund program and its achievements. Seek help from the program's many constituencies in developing this plan and in carrying it out.

Specific actions include:

- **Reaffirm a commitment to communication that includes:**

  - **involving the public as a legitimate partner;**
  - **listening to the public's specific concerns;**
  - **being honest and open; and**
  - **meeting the needs of the media.**

- **Identify those who influence public opinion nationally and locally, including the media, elected officials, and public interest groups, and provide them with timely, accurate information.**

- **Evaluate the efficacy of existing communications techniques and public information materials to intended audiences and identify new methods for public education, including the increased use of stand-alone approaches, such as videotapes, to describe general or actual Superfund site experiences.**

- **Work with reporters to develop a "Journalists' Guide to Superfund" which would provide a national context for the program, describe steps in the process, identify points where public interest is high, and describe remedial technologies.**

- **Address language and definition problems in Superfund by eliminating jargon from our Superfund lexicon. This may be difficult, but the Agency needs to make the effort.**

EXPANDING PUBLIC PARTICIPATION IN NATIONAL PROGRAM OVERSIGHT

FINDINGS: Citizens, industry, Congress, public interest groups and government officials want early and continuous involvement in Superfund oversight. The Superfund program can benefit by involving these constituencies as legitimate partners at the national level. EPA needs to invite the public in to participate in oversight of the Superfund program.

DISCUSSION: Public participation in the decision-making process results in the development of better public policy. This is especially true for programs like Superfund that were created in response to public concern. Most of the people we interviewed indicated that effective public participation must be early, frequent, and consistent.

Stakeholders like states, local officials, responsible parties, industry associations, and environmental/public interest organizations have varying expectations of the Agency's implementation of Superfund. In their reports and during our interviews, these groups expressed concern about not being involved in Superfund oversight, decision making, and implementation early in the process. **They want to be involved during policy development, national decision making, and discussions about different program issues as they evolve.** EPA needs to better understand the specific needs of each interest group with an eye toward more effective involvement. Information gathered through surveys and at focus group meetings could be used in a participatory process that incorporates and assesses stakeholders' viewpoints.

Congressional staff expressed an interest in increasing our dialogue with them. Before we finalize a policy or rule, they would like more involvement in regulatory development through more frequent discussions on such issues as congressional intent. They also believe information briefings and site visits could be productive.

RECOMMENDATIONS: Identify more effective ways to include interested parties in the policy debate at a national level.

Several specific actions should be taken:

- **At the national and/or Regional level, immediately convene a forum(s) representing varying perspectives on the program. The initial forum(s) should be designed to begin an ongoing dialogue with follow up sessions to address specific policy and/or implementation issues. The preparation of authoritative reports is not an explicit goal of this exercise. Dialogue and discussion among Superfund's diverse constituencies is the principal objective.**

- **Use communication tools, such as focus groups or surveys, to assess our constituency groups' opinions of Superfund and use this information to more effectively involve these groups in Superfund oversight and decision making.**

COMMUNICATING IS PART OF EVERYONE'S RESPONSIBILITY

FINDINGS: Too often, Superfund staff and managers do not view themselves as "communicators," even though the nature of their responsibilities projects them into roles as frontline Agency spokespeople. Presently, we tend to see public communication as the job of a few specialists in Headquarters and the Regions. With the exception of the community relations program, outreach does not appear to be consistently viewed as an integral part of carrying out the program.

DISCUSSION: Those interviewed made it clear that we must alter our attitude and begin to realize that "communicating" is simply talking with others who are interested in what we are trying to do. Thus, EPA Superfund staff must be well informed about their jobs and comfortable with talking about the program. This factor is essential to presenting an accurate representation of Superfund's process and progress.

We learned that technical staff and managers are often called upon to respond to questions and concerns from the press, local officials, or residents who drop by the site. While site managers consider the technical needs of the site to be their primary responsibility, other demands to represent EPA and clearly communicate the progress at the site are placed on these individuals by public concern. If communications break down, we are perceived to be insensitive to the affected community. This opens the door to criticisms like: "you don't live here, so you don't care."

Relying solely on trained "communicators" has often tended to isolate the program's technical staff and managers who may be more frequently called on to deal with concerned citizens.

RECOMMENDATIONS: Make public education a Superfund priority for all front-line managers and staff.

Specific actions include:

- **provide appropriate communications assistance to Superfund staff and managers to make communications and outreach successful.**
- **provide communications skills training to all staff and managers.**
- **reward communication successes in ways that serve as positive examples for all employees.**

MEASURING SUPERFUND PROGRESS

To communicate the successes of the Superfund program, data describing program accomplishments must be collected from the sites and delivered to the public. The data must reflect activities at all stages of the cleanup process--not just final actions. The data must demonstrate that the program is meeting the expectations of the range of audiences interested in the program.

Program progress can be shown through the accountability measures EPA routinely collects for internal management and through other informational measures which are chosen to report on specific expectations held by the public. Ultimately, a balance must be struck between having a large enough set of measures to manage the Agency and keeping the number and complexity down so that the measures we track send an unambiguous message to the public of desired program results.

This section provides our findings with regard to (1) the measures needed to communicate progress in line with public expectations and (2) changes that could be made to improve our data collection to support public information needs and to ensure that the measures selected for management provide the correct incentives for accomplishing the major goals of the program. We looked at many efforts already under way to bring the data collection in line with expectations for results and suggest possible additional measures that would increase our ability to report progress for all the stages of the program.

FINDINGS: EPA has not reported Superfund progress in ways that meet the public's expectations for timely completion of sites, vigorous enforcement against potentially responsible parties (PRPs), and -- most importantly -- protection of human health and the environment. Effective national oversight requires information on Superfund's environmental results. Future reporting of progress in this area will help to regain public confidence in the program. For this reason, the Superfund program has begun to develop additional measures to address environmental as well as enforcement results. Even though none of these measures is perfect, we are committed to start collecting the data on them in October 1989, with the expectation that they will be improved over time as we start to report progress on achieving public health, environmental and enforcement goals early in 1990.

DISCUSSION: EPA has primarily collected progress data for use in program management and accountability. Although certain accountability measures are necessary for management and budget purposes, such as remedial action starts and fund dollars obligated, reporting these administrative actions outside the Agency has not been an effective way of communicating the accomplishments of the program. They have been perceived as primarily reflecting "inputs" (beginnings of activity), rather than "outputs" (results of actions) and generally don't describe what is actually occurring in the cleanup process in terms that are consistent with the public's expectations for Superfund.

In particular, the current set of measures doesn't address the public health and environmental results of the program. For example, removal of leaking containers and contaminated materials serves to control or even eliminate the imminent danger to human health and the environment. Similarly, during remedial actions to clean up sites, continual progress is made in reducing the hazards the sites pose. However, the measures EPA currently tracks and reports for management purposes, such as "removal completion" and "RD/RA completion" don't convey the public health or environmental benefits of those activities.

The current set of measures also doesn't do a very good job communicating the range of results from intermediate actions taken at sites. For example, "deletion" of a site from the National Priorities List, widely accepted as the only measure of progress in the Superfund program, is an accountability system measure. But, the relatively small number of sites in this category doesn't reflect the real reduction in risk to human health and the environment or the extensive long-term work conducted at the site before the deletion stage. In the action stages of the program, there are many sites where extensive work to reduce risks has been done, even though long-term treatment and/or pumping remedies might be needed before the site is finally "delisted." This "delisting" process can take several years.

We found that the following additional measures are needed to communicate program progress:

- Environmental Results. The principal expectation of the public is that EPA and PRPs will take the necessary steps to control the risks to human health and the environment from abandoned waste sites. The public wants to see action to remove, treat, or contain hazardous substances, and progress toward achieving the human health and ecological goals on and near the sites.

- Timeliness. Recent critiques of the Superfund program note that it is difficult for those outside the Agency to follow a site or set of sites though the cleanup process and to determine whether cleanup activities are being conducted in a timely manner. At the same time, there are many constraints on timeliness that may make it difficult to develop a good measure of timeliness. Nonetheless, it has been suggested that some measure of timeliness based on expected time frames for average sites is needed to help communicate progress in cleanup activities.

- Community Involvement. Recent studies suggest that some measure is needed to reflect the degree or quality of community involvement in site decisions nationwide and that we need to use measures that provide an incentive for early, frequent, and consistent communication with communities near sites. Some have also suggested that measures of Agency-wide community relations activities are needed.

- Innovative Technologies. Currently, there is no measure to reflect the kinds of remedies being selected at sites, particularly the use of innovative technologies and the extent of preference for treatment. Some people have suggested that measures are needed to communicate whether the appropriate remedies are being used and how extensively and quickly new technologies are being used. The Agency has already conducted a study of remedy selection in site decisions (1988 ROD Survey) that can be used to communicate this information to the public.

- Enforcement. Use of existing accountability measures to communicate enforcement accomplishments has been criticized for two primary reasons. First, measures assigned to the enforcement program don't measure the degree or quality of participation or co-operation from PRPs and what this means in terms of Fund money saved. Second, measures assigned to the remedial program are not linked to successful enforcement actions. New measures should focus on those activities that result in early and substantive involvement by PRPs and on activities most likely to result in actions closely linked to actual site cleanup.

Several major initiatives are already under way that will provide new measures for communication of program progress. EPA plans to begin tracking a limited set of environmental measures or "indicators" in 1990 to better reflect Superfund's progress in protecting human health and the environment. In addition, changes to the accountability measures will make them more useful for informational purposes. For example, existing measures of "first Record of Decision" and "final Record of Decision" will be combined into one measure reflecting remedy selection at sites on the National Priorities List (NPL). Similarly, a new measure has been developed to describe the percent of all proposed or final NPL sites that have been addressed.

RECOMMENDATIONS: Accelerate the improvements to the existing management measures to support the national program managers' communication of Superfund progress. Wherever possible, report the information in 1990.

Specific actions should include:

- **by October 1, 1989 begin collection of data to report environmental results indicators for:**
    - **the number of sites where exposures from air, surface water and/or ground water releases of hazardous substances have been controlled.**
    - **progress towards meeting the human health and/or ecological goals at sites.**
    - **the amount of hazardous material treated or removed and area of material contained.**
- **also by October 1, 1989, begin collecting data to report:**
    - **the timeliness of moving a site through the various stages of site remediation, measured against preestablished criteria.**
    - **the extent of PRPs' participation in the program.**
- **accelerate the development of additional measures for reporting:**
    - **the types of technologies used to control and cleanup sites, including alternative and innovative technologies.**

additional environmental indicators for 1) the number of people protected from exposures to hazardous substances, and 2) changes in concentrations of contaminants at sites.

ACHIEVING INCENTIVES FOR EFFICIENCY AND RESULTS

FINDINGS: The large number of management measures, linked to specific action and sites, limits the Regions' flexibility to creatively apply the variety of tools in Superfund to achieve maximum results. Ultimately, with a large number of measures, everything is an equal priority. This reduces the ability of the Regions to concentrate on a limited set of strategic priorities such as greater PRP participation and faster cleanup actions at sites. Recognizing that the existing set of measures is the basis for much of the planning and Regional resource distributions, and that major reductions in the number or diversity of measures could have serious consequences for our budget and management systems, nonetheless it is time to look at other approaches that could provide a greater incentive for efficiency and action.

DISCUSSION:

Adding More Meaningful Measures?

A cursory review of the accountability measures only begins to suggest the magnitude and complexity of the Superfund program. These measures have been developed and refined over time to reflect the statutory goals, the institutional organization, public expectations, and incentives and disincentives for implementing the program. Furthermore, the measures are tied not only to performance but form the basis of our budgeting system. Staff resources and contract dollars are carefully apportioned according to the workload models, which find their basis in the accountability systems.

In our conversations with the Regions and the program office, we found a delicate truce between EPA Headquarters' need for measures of accountability and the Regions' desire for flexibility. While there was limited agreement as to how many measures are enough, the bottom line is resources, and both sides agree that the current system, while flawed, works well enough to allocate budgets and track activities.

Headquarters managers want a comprehensive set of measures because it provides more detail for oversight of different aspects of the program. Multiple measures help to ensure that numerous policy directives under this complex program are carried out consistently in all Regions, and the current set reflects those national policies.

The Regions feel the pinch of the oversight and the heavy reporting burden. Each Region already has to dedicate a significant amount of resources to reporting, which they accept (for the most part) as part of doing business. They don't want to increase that burden and further believe that reducing the emphasis on "beans" could result in greater return in increased participation in the program by PRPs.

Using Measures as Incentive for Performance

The data collection issue becomes more difficult when we look at the role of measures as incentives for achieving progress. The large number and broad focus of these measures serves to split the program into many different small areas. Hence, there is little sense of priority; all activities are important. While this has been accepted as a necessary step to start up a complex program, we should reexamine the ramifications of such a mixed message for accomplishing the goals of the program now that it is reaching greater maturity.

EPA Should Pilot Test Alternative Approaches to Regional Management

While no consensus emerged during our interviews, three different approaches were suggested to change the way the Regions are managed and improve performance. Since the ramifications of these alternatives are significant, EPA should pilot test them in a few Regions. These alternatives are:

Allowing Greater Flexibility to Leverage the Fund. Some Regions have suggested that the existing set of accountability measures restricts their flexibility to effectively use the mix of fund and enforcement tools to improve the efficiency of the program. They argue that this flexibility is necessary to overcome the overwhelming shortfalls inherent in the Fund and the significant resources needed to clean the sites. **In particular, the Regions would like greater flexibility to use the fund as a highly visible lever to apply at sites where the PRPs are recalcitrant or unnecessarily delaying negotiations.** Because the current system sets so many specific targets for numbers of individual actions, the Regions feel that frequently their hands are tied to shift strategies and types of actions as a site develops. Reducing the number of measures would mean eliminating many measures and targets with more of a focus on improved performance in a limited number of areas. These should be closely linked with the overall goals of the program, such as increased responsible party participation and faster site cleanups.

While attractive, this proposal does presents some difficulties. First, developing workload models without the wide range of measures may be difficult. Also, EPA would have less of the national data base of actions that Congress and specific interest groups often ask it to produce. While these problems are significant, they are not insurmountable.

Using National Audit Teams. A second supplemental approach would pilot test the use of national audit teams to visit the Regions to assess performance. The idea would be to have these audit teams substitute for some components of the existing quarterly reporting now done by the Regions. The audit teams would be expected to collect the necessary progress and accounting information to report on the Region's progress. An added benefit of this approach is that the audit teams could function as effective vehicles for transferring innovative program approaches from Region to Region.

To be effective, these teams would have to work closely with the Regional Coordinators and be staffed with senior, experienced personnel who understand the program. They would have to view the audits as part of a productive partnership with the Regions and not as a opportunity for fault finding.

Targeting Awards to Results. Another supplemental suggestion is to improve the Superfund personnel award system. Superfund staff are under great public and management pressure and scrutiny. **A greater emphasis on "celebrating successes" would convey a message to staff and the public regarding our emphasis on action and results.** Highly selective (and lucrative) awards for innovative approaches that produce significant accomplishments in environmental results, timeliness, community involvement, and enforcement could be presented as examples of desired performance. While this step would not directly change the number of measures, an enhanced and highly visible awards system would serve to emphasize key areas of performance expectations.

RECOMMENDATIONS: Begin a process to review Superfund's internal management measures with an eye toward eliminating unnecessary or redundant reporting and focusing more directly on improving performance. Pilot test alternative approaches to increase Superfund performance and achieve environmental results. Possible pilots include:

- **Reducing the number of measures tracked in the Regions and providing greater flexibility to the Regions to leverage Fund monies to increase PRPs' participation in settlements and to accelerate cleanups.**
- **Supplementing the complex system of accountability measures with program audit and oversight teams charged with the mission of improving performance at Headquarters and in the Regions. These should be regarded as productive partnerships for improving total quality in the program.**
- **Celebrating success by expanding the use of awards as incentives.**

NEXT STEPS

President Bush promised the American people that he was firmly committed to cleaning up toxic waste sites: "I'm for an aggressive, no nonsense approach to cleaning up toxic waste dumps, I'm for strengthening enforcement against dumpers, quickening the pace of our cleanups, and streamlining the bureaucracy that sometimes slows them down." This report constitutes the first installment toward fulfilling the President's promise.

According to recent Roper and Associated Press surveys, toxic waste cleanup is perceived by the public to be the nations's most pressing environmental problem. The recommendations in this report are the first steps in what must be an ongoing and developing effort to make the Superfund program work more effectively. However, for there to be a meaningful change in the public perception of Superfund there must be strong and determined leadership on the part of those charged with the tasks of managing the environmental agencies of the federal and state governments. Leadership emanates from those elected by the citizenry and from public officials entrusted with the stewardship of government programs.

This leadership begins with EPA's Administrator, William K. Reilly, and with the other officials appointed by the President. The day-to-day managers of Superfund in Washington, in the ten Regional offices, and at the various Superfund sites across the nation must have the full support of their appointed leaders. These managers at Headquarters and in the Regions should reflect the leadership and commitment necessary to make this program work.

Several of the recommendations in this report address the necessity of a more productive partnership between EPA Headquarters and the Regional offices. The Regional offices are the focal point from which the real job of cleaning up sites gets done. The Regional offices will be given the cooperation and continue to have the flexibility to be innovative in their approach to especially difficult or unusual tasks. There will be, however, more of an emphasis on consistency of result: abatement of toxic substances at the greatest possible number of sites on the National Priorities List so that risks to the health and safety of people in surrounding communities is minimized in the shortest possible time.

Action is now the key requirement for success. While EPA will continue to engage in the productive dialogue with Congress and with Superfund's many other constituencies that has characterized the investigations leading to this report, we now have to get serious about making sure we have the resources to get the job done. Accordingly, the Agency should request the reprogramming of certain funds already in the Superfund budget in order to put more employees into Superfund enforcement, policy and regulatory analysis, community relations work and site management.

EPA must also now begin the process of developing a results oriented plan and schedule for implementing the major recommendations and actions mandated in this report. Though some recommendations have already been acted upon, and many others are presently in various stages of completion, a complete schedule and implementation plan for all recommendations in the report will be prepared by September 1, 1989. These task schedules and timelines will subsequently be reflected in the work plans of Agency program managers and supervisors at Headquarters and in the Regions. EPA's implementation plan will manifest a respect for the deadlines that have been set forth in the 1986 SARA legislation.

The Task Groups anticipate that prompt action on the recommendations contained in this report will help to regain the credibility necessary to restore public confidence in the Agency's administration of this very demanding program. Indeed, public trust in the work of dedicated employees is the most important asset any government program can hope to achieve. EPA looks forward to working with Congress and with the program's many constituencies to achieve the public health and environmental goals in Superfund's enabling statutes. What we seek now is public acceptance of the approach set forth in this report and room to operate in a supportive environment.

EPILOGUE

Finally, in addition to the far reaching recommendations in this report, there are several significant matters that were not capable of being adequately addressed during the 90 day review period. Though each task group identified several noteworthy issues for further investigation and review, the three issues below were selected as management concerns substantially intertwined with the action agenda outlined in this report.

STATE/FEDERAL PARTNERSHIP

Because of the large number of sites that require cleanup and the long-term nature of the Superfund program, it is necessary to reexamine the roles of state and federal governmental entities in the program. EPA will convene a conference of key state and federal officials to examine the evolving state/federal relationship and to make further recommendations to the Administrator on this issue. EPA also will work with the states to develop a plan for state participation in the Superfund enforcement program.

CONTRACTOR CAPACITY TO MEET SUPERFUND NEEDS

The Offices of Emergency and Remedial Response and Administration should undertake an analysis of the long-term contract needs of the Superfund program to project how EPA will meet the workforce demands of the future using a combination of available technically competent contractors and in-house expertise to ascertain what in-house expertise EPA should build.

This analysis should examine the complete hazardous waste personnel market, including: State hazardous waste programs; RCRA corrective action; Departments of Energy and Defense; and private sector personnel requirements and compensation.

EFFECTIVELY MEASURE AND COMMUNICATE BENEFITS OF SUPERFUND

EPA should identify ways to measure and communicate the direct and indirect benefits of the Superfund program beyond those associated with the remediation of sites listed on the National Priorities List. This will require characterization of the progress made at addressing releases of hazardous substances at sites that are not listed on the NPL, including the efforts of EPA's Superfund removal program, other federal agencies, state and local governments, and the responsible parties. It also will require characterization of the extent of indirect benefits from the Superfund program on such business sectors as real estate, hazardous waste management and disposal, insurance, corporate mergers and takeovers, technology development and transfer, and litigation.

APPENDICES

APPENDIX I

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APPENDIX II

ACRONYMS

ARAR: Applicable or Relevant and Appropriate Requirements

ATSDR: Agency for Toxic Substances and Disease Registry

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980

DOJ: Department of Justice

FAR: Federal Acquisition Regulations

FEA: Field Enforcement Attorney

FS: Feasibility Study

NBAR: Non-binding Allocations of Responsibility

NCP: National Contingency Plan

NETAC: National Environmental Technology Applications Corporation

NPL: National Priorities List

OSC: On-Scene Coordinator

O&M: Operation and Maintenance

PRP: Potentially Responsible Party

ROD: Record of Decision

RA: Remedial Action

RCRA: Resource Conservation and Recovery Act

RD: Remedial Design

RI: Remedial Investigation

RPM: Remedial Project Manager

SARA: Superfund Amendments and Reauthorization Act of 1986

SITE: Superfund Innovative Technology Evaluation Program

TAG: Technical Assistance Grants

OFFICES OF THE ENVIRONMENTAL PROTECTION AGENCY (EPA):

OECM: Office of Enforcement and Compliance Monitoring

OERR: Office of Emergency and Remedial Response, OSWER

OEETD: Office of Environmental Engineering and Technology Demonstration, ORD

OWPE: Office of Waste Programs Enforcement, OSWER

OPMT: Office of Program Management and Technology, OSWER

ORD: Office of Research and Development

OSWER: Office of Solid Waste and Emergency Response

OARM: Office of Administration and Resources Management

APPENDIX III

GLOSSARY

Administrative Order on Consent: A legal agreement between EPA and potentially responsible parties (PRPs) whereby PRPs agree to perform or pay the cost of a site cleanup. The agreement describes actions to be taken at a site and may be subject to a public comment period. Unlike a consent decree, an administrative order on consent does not have to be approved by a judge.

Administrative Record: A file which is maintained and contains all information used by the lead agency to make its decision on the selection of a response action under CERCLA. This file is to be available for public review and a copy is to be established at or near the site, usually at one of the information repositories. Also, a duplicate file is held in a central location, such as a Regional or State office.

Cleanup: Actions taken to deal with a release or threatened release of hazardous substances that could affect public health and/or the environment. The term "cleanup" is often used broadly to describe various response actions or phases of remedial responses such as the remedial investigation/feasibility study.

Community Relations: EPA's program to inform and involve the public in the Superfund process and respond to community concerns.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act. The Acts created a special tax that goes into a Trust Fund, commonly known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, EPA can either:

- Pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work; or
- Take legal action to force parties responsible for site contamination to clean up the site or pay back the Federal government for the cost of the cleanup.

Consent Decree: A legal document, approved and issued by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) where PRPs will perform all or part of a Superfund site cleanup. The consent decree describes actions that PRPs are required to perform and is subject to a public comment period.

Cost Recovery: A legal process where potentially responsible parties can be required to pay back the Federal government for money it spends on any cleanup actions.

De Minimis Settlements: Settlements that are smaller agreements separate from the larger settlement for the chosen cleanup remedy. Under de minimis settlements, relatively small contributors of waste to a site, or landowners who bought the site but did not contribute wastes to it, may resolve their liability.

Emergency: Those releases or threats of releases requiring initiation of on-site activity within hours of the lead agency's determination that a removal action is appropriate.

Feasibility Study: See Remedial Investigation/Feasibility Study

Ground Water: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel. In aquifers, ground water occurs in sufficient quantities that it can be used for drinking water, irrigation and other purposes.

Hazard Ranking System: A scoring system used to evaluate potential relative risks to public health and the environment from releases or threatened releases of hazardous substances. EPA and States use the HRS to calculate a site score, from 0 to 100, based on the actual or potential release of hazardous substances from a site through air, surface water, or ground water to affect people. This score is the primary factor used to decide if a hazardous waste site should be placed on the National Priorities List.

Hazardous Substance: Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.

Information Repository: A file containing current information, technical reports, and reference documents regarding a Superfund site. The information repository is usually located in a public building that is convenient for local residents -- such as a public school, city hall, or library.

Mixed Funding: Settlements where potentially responsible parties and EPA share the costs of the response action and EPA pursues viable non-settlers for the costs EPA incurred.

National Oil and Hazardous Substances Pollution Contingency Plan: The Federal regulation that guides the Superfund program.

National Priorities List: EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response using money from the Trust Fund. The list is based primarily on the score a site receives on the Hazard Ranking System. EPA is required to update the NPL at least once a year.

Non-binding Allocations of Responsibility: Process for EPA to propose a way for potentially responsible parties to allocate costs among themselves.

On-Scene Coordinator: The Federal official who coordinates and directs Superfund removal actions.

Operable Unit: An action taken as one part of an overall site cleanup. For example, a carbon absorption system could be installed to halt rapidly spreading groundwater contaminants while a more comprehensive and long-term remedial investigation/feasibility study is underway. A number of operable units can be used in the course of a site cleanup.

Operation and Maintenance: Activities conducted at a site after a response action occurs, to ensure that the cleanup or containment system is functioning properly.

Potentially Responsible Party: An individual (s) or company (ies) (such as owners, operators, transporters, or generators) potentially responsible for, or contributing to, the contamination problems at a Superfund site. Whenever possible, EPA requires potentially responsible parties, through administrative and legal actions, to clean up hazardous waste sites they have contaminated.

Record of Decision: A public document that explains which cleanup alternative(s) will be used at National Priorities List sites. The record of decision is based on information and technical analysis generated during the remedial investigation/feasibility study and consideration of public comments and community concerns.

Remedial Action: The actual construction or implementation phase that follows the remedial design of the selected cleanup alternative at a site on the National Priorities List.

Remedial Design: An engineering phase that follows the record of decision when technical drawings and specifications are developed for the subsequent remedial action at a site on the National Priorities List.

Remedial Investigation/Feasibility Study: Investigative and analytical studies usually performed at the same time in an interactive, iterative process, and together referred to as the "RI/FS." They are intended to:

- Gather the data necessary to determine the type and extent of contamination at a Superfund site;
- Establish criteria for cleaning up the site;
- Identify and screen cleanup alternatives for remedial action; and
- Analyze in detail the technology and costs of the alternatives.

Remedial Project Manager: The EPA or State official responsible for overseeing remedial response activities.

Remedial Response: A long-term action that stops or substantially reduces a release or threatened release of hazardous substances that is serious, but does not pose an immediate threat to public health and/or the environment.

Removal Action: An immediate action taken over the short-term to address a release or threatened release of hazardous substances.

Response Action: A CERCLA-authorized action at a Superfund site involving either a short-term removal action or a long-term remedial response that may include, but is not limited to, the following activities:

- Removing hazardous materials form a site to an EPA-approved, licensed hazardous waste facility for treatment, containment, or destruction.
- Containing the waste safely on-site to eliminate further problems.
- Destroying or treating the waste on-site using incineration or other technologies.
- Identifying and removing the source of ground water contamination and halting further movement of the contaminants.

Responsiveness Summary: A summary of oral and/or written public comments received by EPA during a comment period on key EPA documents, and EPA's responses to those comments. The responsiveness summary is a key part of the ROD, highlighting community concerns for EPA decision-makers.

Trust Fund: A Fund set up under the Comprehensive Environmental Response, Compensation, and Liability Act to help pay for cleanup of hazardous waste sites and to take legal action to force those responsible for the sites to clean them up.

Unilateral Administrative Order: A legal document issued by EPA directing a potentially responsible party to perform site cleanup. It sets forth the liability of the party for the cleanup, describes actions to be taken, and subjects the recipient to penalties and damages for noncompliance. Unilateral orders may be enforced in court.

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